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INDEX TO VOLUME XVII

- Abdominal Actinomycosis, John W. McGee, M. D., and Frederick C. Hill, M. D. 397
- Accuracy of Biologic Tests for Pregnancy, B. Carl Russum, M. D. 446
- Acquired Hemolytic Icterus, J. Harold Lynch, M. D. 71
- Agranulocytosis Angina, John Buis, M. D., and N. E. Hansen, M. D. 197
- Alarming Symptoms Following Maxillary Sinus Medication: Case Report, D. D. Sanderson, M. D. 400
- Analysis of Results in All Consecutive Cases of Perineal Prostatectomy, Edwin Davis, M. D. 224
- Annotations on the Summers' Syllabus, F. A. Long, M. D. 151
- Anterior Poliomyelitis: Diagnosis, Prognosis, and Treatment, Floyd S. Clarke, M. D., F. A. C. P. 283
- Artificial and Pseudo-Voice Following Complete Laryngectomy, Philip L. Romonek, M. D., F. A. C. S. 238
- Aspects of the Physiology of Bone, Some, Carl A. Dragstedt, Ph. D., M. D. 93
- Avertin Anaesthesia, Roy H. Whitham, M. D., and I. C. Munger, Jr., M. D. 20
- Carcinoma of the Oral Cavity, A. F. Tyler, B. Sc., M. D. 185
- Cardiac Enlargement, Frederick W. Niehaus, M. D. 365
- Character of Labor—Its Influence on Puerperal Infection, The, Daniel H. Bessesen, M. D. 32
- Cleft Palate, Wm. L. Shearer, A. B., M. D., D. D. S., F. A. C. S., F. A. C. D. 66
- Clinical Aspects of the Cancer Problem, George W. Crile, M. D. 153
- Clinical Aspects of Excretion Urography, Arbor D. Munger, B. Sc., M. D., F. A. C. S. 381
- Concerning the Nature of Epigastric Hernia and Its Relation to Gastric and Other Disturbances, Leonard Freeman, M. D. 159
- Contact Glasses, J. Hewitt Judd, M. D. 195
- Councilor Annual Meeting Nebraska State Medical Association 117
- Diagnostic and Therapeutic Injection of the Sympathetic Nervous System, Walter D. Abbott, M. D. 293
- Diseases of the Thyroid Gland, Byron B. Davis, M. D. 372, 425, 477
- Diseased Gallbladder, The, Earl G. Johnson, M. D. 450
- Drug Idiosyncrasy Due to the Phenyl Group, Edward S. Maloney, M. D. 205
- Early Diagnosis and Treatment of Intra-Cranial Hemorrhage in the New-Born, Clyde Moore, M. D. 513
- Early Surgeons and Surgical Operations in Nebraska, H. Winnett Orr, M. D. 309
- Editorials—
  - Aged, Indigent Physicians 80
  - American Medical Association Meeting at New Orleans 173
  - Annual Clinic Day at Bryan Memorial Hospital 534
  - Annual Congress on Medical Education, Licensure, and Hospitals 171
  - Annual Dues 34, 80, 122
  - Annual Meeting of the American Society for Study of Arthritis 84
  - Annual Meeting Papers 122
  - Auxiliary Notes 41, 88, 130, 174, 217, 262, 313, 355, 501
  - Book Reviews 91, 220
  - Budgeted Medical Service 456
  - Call for Annual Meeting Papers 80
  - Coming Meeting of the Medical Society of the Missouri Valley, The 127
  - Community Service 307
  - Complimentary Dinner Celebrating Fifty Years in Medical Profession Tendered Editor 210
  - Concerning Spinal Anesthesia 403
  - Congratulations on a Twenty-fifth Anniversary 537
  - Convalescent Hospital and Chapel 83
  - County's Liability for Medical Service, The 492
  - Crippled Children's Free Clinics 305
  - Custer County Society Honors Dr. A. L. Mathews 538
  - Debt of Ex-Presidents to Organized Medicine, The 402
  - DeKalb County Physicians Pay Dues 80
  - Dermatological Hint No. I 81
  - Dermatological Hint No. II 127
  - Dermatological Hint No. III 212
  - Dermatological Hint No. IV 260
  - Dermatological Hint No. V 310
  - Dermatological Hint No. VI 353
  - Dermatological Hint No. VII 408
  - Dermatological Hint No. VIII 459
  - Dermatological Hint No. IX 498
  - Dermatological Hint No. X 539
  - Diagnosis and the Doctor 39
  - Distinguished Service Medal Awarded to Dr. A. F. Tyler 455
  - Echoes of the New Orleans Meeting 257
  - Editorial Wisdom is Challenged 455
  - Edwin Smith Surgical Papyrus X, The 39
  - Electrosurgery 403
  - Elkhorn Valley Society Meeting, The 456
  - Engineer and the Doctor, The 85
  - Evans, Dr. Carroll D., Columbus Surgeon, Honored: Fifty Years in Medicine 309
  - Fifty-two Years in Medicine—Dr. George J. Rubelman 352
  - Fifty Year Honor Roll, Dr. John P. Lord and Dr. Harry Hapeman 213
  - Forthcoming Annual Meeting, The 208
  - General Practitioner's Response to the Challenge of Obstetrics 407
  - Genesis of Social Insurance, The 37
  - Group Insurance Cancelled and Discontinued 454
  - Group Purchase of Medical Care 495
  - Health Education Activities One Reason for State Fair 402
  - Honor to Whom Honor is Due 538
  - "How Do You Do?" 80
  - Inactive Duty Training at Mayo Clinic 406
  - Infantile Eczema: Study Based on One Hundred and Sixty Cases 409
  - Installation of President of the Nebraska State Medical Association 312
  - Insurance Against Auto Accidents Should Be Payable to Hospitals and Surgeons 256
  - Interneships, Creighton University School of Medicine, Class of 1932 357
  - Invitation to Attend Iowa State Medical Society Meeting, An 173
  - Jaunt Along the Lower St. Lawrence, Notes of a 354
  - Joint Meeting Eleventh and Twelfth Councilor Districts 493
  - Lengthy Papers 455
  - Lest We Forget Hospitals Are Built for Service for Rich and Poor Alike 257
  - Lewis, Dr. Dean, President-Elect, American Medical Association 305
  - Look at the Post Graduate Medical Assembly, A 536
  - Medical Editor Looks at the Iowa Meeting, A 256
  - "Medical Liberty" Propaganda 304
  - Medical Malpractice 535
  - Medical Organization and the New Year 34
  - Medico-Legal Disabilities No. I 408
  - Medico-Legal Disabilities No. II 459
  - Medico-Legal Disabilities No. III 498
  - Medico-Legal Disabilities No. IV 539
  - Minister Looks at the County Physician Problem, A 259
  - Missouri Valley Medical Society Gives a Superb Postgraduate Course 208
  - More Reasons Why Your Membership Should Remain Intact 170
  - Most Governments Are Inefficient or Corrupt—Some Are Both 126, 211
  - Nebraska Academy of Ophthalmology and Otolaryngology 307
  - Nebraska College of Surgeons Postgraduate Course, The 86
  - Nebraskans' Contribution to the Chiengmai Leper Asylum 123
  - Nebraska Tuberculosis Association Meeting 216
  - Nebraska Tuberculosis Association Meeting 305
  - Necrology—
    - Ackley, A. Winfield 461
    - Ambrose, Addison L. 216
    - Baker, Barton B. 174
    - Barns, Cass G. 460
    - Bauguess, Harry 354
    - Bias, M. D. 174
    - Blackburn, Mathew H. 130
    - Brainard, Jerry E. 311
    - Cameron, John J. 174
    - Crawford, Andrew 174
    - Davis, William M. 41
    - Dugan, William F. 216
    - Easton, Cyrus M. 262
    - Elmore, John Q. 312
    - Evans, Morris H. 500
    - Fairall, Truman E. 130
    - Faulk, Andrew J. 354
    - Graham, Alfred C. 88
    - Hanna, Edgar A. 460
    - Hanna, Edwin B. 88
    - Hansen, Douglas E. 410
    - Henry, Walter O. 216
    - Herney, Adam 262
    - Hildreth, Mortimer L. 41
    - Hinckman, Joseph V. 354
    - Hopper, Oscar C. 130
    - Hylton, William N. 541
    - Jenison, Andrew J. 500
    - Jones, Thomas J. 460
    - Kalar, James R. 500
    - Kemper, W. G. 262
    - Kucera, Frank H. 541
    - Lambley, George W. 262

Lindquist, Arthur L. 41
Livingston, John Stuart 130
Losey, Ray R. 88
Lynch, Albert 216
McDermott, Bernard A. 88
MacKinnon, Artemas I. 41
Macrae, Donald A. 88
Malster, John C. 541
Metzinger, John J. 130
Mitchell, William F. 312
Moore, Orville M. 174
Nelson, Lloyd L. 174
O'Connell, James M. 216
Ramey, Walter N. 410
Roe, G. L. 174
Shaw, Lawrence M. 410
Shulte, Herman von W. 354
Slabaugh, Warren H. 130
Spatz, Joseph E. 312
Starkey, Harvey L. 354
Towne, Solon R. 130
Vanderhoof, Thomas J. 461
Walker, Henry C. 460
Warner, Emma Sams 410
Notes From the St. Louis College of Surgeons Meeting 534
Nurse on Horseback in the Kentucky Hinterland, The 124
Observations on the Annual Meeting at Lincoln 304
Obstetrical and Gynecological Hint No. I 82
Obstetrical and Gynecological Hint No. II 128
Obstetrical and Gynecological Hint No. III 212
Obstetrical and Gynecological Hint No. IV 260
Obstetrical and Gynecological Hint No. V 310
Obstetrical and Gynecological Hint No. VI 353
Obstetrical and Gynecological Hint No. VII 408
Obstetrical and Gynecological Hint No. VIII 459
Obstetrical and Gynecological Hint No. IX 498
Obstetrical and Gynecological Hints No. X 539
October 454
Papers for Annual Meeting 34
Poor Man Without Funds, Property, or Credit, Ward of County, Not of Doctor 492
Postgraduate Course of the College of Surgeons, The 170
Post-Graduate Extension Courses 404
Premedical Education Requirements 454
Present Status of Malpractice Insurance in Nebraska 494
Presidential Pertinent Points 209
President Stark Looks at Malpractice Suits 36
Presumptive Kahn Test 495
Proctologic Hint No. XV 39
Professor Sigerist on Medical History of the Middle Ages 81
Progress at the Douglas County Hospital 172
Quality of Medical Services Deteriorate Under Compulsory Health Insurance 308
Rabies 405
Recommendations Made for the Future of Pharmacy 259
Report of the Committee on the Cost of Medical Care 532
Robert Koch Anniversary 122
Schedule Post Graduate Course University of Nebraska; College of Medicine 265
Schulte, Dr. Herman von W., Dean 348
Secretary Illinois Medical Society on Crippled Children's Clinics 351
Severe Small Pox Still Occurs in Nebraska 260
Shall the Surgeon's or Pathologist's Diagnosis Stand in Appendicitis Cases? 84
Shoulders' Disability Insurance Plan for Veterans, The 35
Sioux Valley Eye and Ear Academy Meeting, The 38
Snowden, Dr. Charles C., Fifty Years at Davenport, Nebraska 260
Social Insurance Impossible to Abolish When Once Established 457
Social Insurance is Contrary to the Fundamental Principles of Democratic Government 82
Social Insurance Undermines National Character 350, 406
Social Medicine and the Medical Profession 124
Some Problems of the American Red Cross 497
Statement of Just What Was Done With Each Member's $8.00 During 1931 127
Stockman and the Doctor, The 212
Study of Appendicitis, A 534
Suggested Diagnostic Test for Cervical Cancer 38
Surgical Treatment of Pulmonary Tuberculosis, The 214
"The Care of the Dying" 348
Traumatic Surgery in Rural Communities 533
Tuberculosis Hint, No. I 498
Tuberculosis Hint No. II 539
Tuberculosis Abstracts 217, 263, 313, 357, 410, 416, 500
University of Nebraska College of Medicine Post-Graduate Course 212
University of Nebraska College of Medicine Graduates of 1932 and Their Internship Appointments
Visit to Mound Builders Tombs, A 457
Volume Seventeen 533
Women's Auxiliary President's Address 355
Year Ahead 34
Your Sixty-fourth President 209
Efficiency in Medical Practice, Francis W. Heagey, M. D., F. A. C. P. 431
Elks Crippled Children's Clinics, F. W. Buckley, M. D. 280
Etiology and Mechanics of Massive Atelectasis, The, Ephriam Korol, M. D. 101
Familial Icterus Gravis of the Newborn: Case Report, Joseph Kuncl, M. D. 206
Foreword to Dr. John E. Summers' Number 133
Head Injuries, Walter D. Abbott, M. D. 74
Health Program in the Public Schools, Elizabeth Ash Langfield, M. A. 117
Hemorrhoids, Their Treatment by Both Operative and Injection Methods, and the Results to Be Expected Following Their Treatment, Louis E. Moon, M. D. 289
Hyperthyroidism and Neurasthenia, W. J. Arrasmith, M. D. 486
Idiopathic Aplastic Anemia: Report of Case, Roscoe P. Luce, M. D., and J. Harold Lynch, M. D. 334
Importance of Primary Treatment in Fractures, The, H. Winnett Orr, M. D. 18
Index of Dr. J. E. Summers Papers 144
Indications For and Results of the Surgical Treatment of Pulmonary Tuberculosis, Thos. J. Kinsella, M. D., F. A. C. S. 269, 321
Indications for Intestinal Drainage—Enterostomy and Colostomy—Technique of Operation, Donald Macrae, Jr., M. D. 161
Industrial Accidents and Chronic Arthritis, J. E. M. Thomson, M. D. 324
Infant Feeding, E. S. Wegner, M. D. 377
In Memoriam 344
Introspection of the Profession, An, Clayton Andrews, M. D. 434
Investigation of Sterility, The, Harold S. Morgan, M. D. 386
List of Journals Showing the Number of Papers Published in Each, and the Year 144
Management of the Child With a Defective Heart, The, Herman M. Jahr, M. D. 109
Mantoux Observations in 520 Indian Children, Homer Davis, M. D., F. A. C. P. 98
Massive Doses of Antitetanic Serum: Case Report, Lucien Stark, M. D. 452
Mechanical Considerations of Inspiration During and Following Operations, C. A. Roeder, M. D. 275
Minutes of the 1932 Annual Meeting 343
Modern Viewpoint of Traumatic Epilepsy, A, K. S. J. Hohlen, M. D. 436
Mumps With a Double Complication of Meningitis and Pancreatitis, W J. Gentry, M. D. 383
Myocardial Versus Valvular Defects, George W. Covey, M. D. 448
Myomectomy During Pregnancy: A Case Report, Charles O'Neill Rich, Earl C. Sage, H. D. Lee 250
Nebraska Hospitals and Their Relation to the Practitioner, Francis J. Bean, M. D. 243
Nephritis in Pregnancy, Charles W. Moon, M. D. 417
Obstruction of Pylorus in Infancy, A. A. Conrad, M. D. 49
Obstruction of the Small Intestine Due to Benign Granuloma, Clayton Andrews, M. D., F. A. C. S. 106
Osteomyelitis of the Skull, C. G. Moore, M. D. 489
Pathogenesis and Clinical Syndromes, G. Alexander Young, M. D. 505
Pathology, Diagnosis and Treatment of Tumors of the Breast, The, Herbert H. Davis, M. D., F. A. C. S. 525
Perforation of the Uterus in Attempted Self-Induced Abortion, C. H. Waters, M. D., F. A. C. S. 253
Peptic Ulcer Syndrome Without Ulcer, Andrew B. Rivers, M. D., and Frances R. Vanzant, M. D. 465
Pernicious Vomiting, Earl C. Sage, M. D. 413
Physiology of Mucous Secretion With Some Experimental Results on the Prevention of Ulcer With "Gastric Mucin", The, A. C. Ivy, M. D. 317
Practical Points in Allergy, Some, O. A. Reinhard, M. D. 1
Precipitation of Acute Thyroidal Symptoms by Operation Elsewhere in the Body, Max Emmert, M. D. 253
Pre-Eclampsia and Eclampsia, Leon S. McGoogan, M. D. 419
Present Status of Botulism in Food Poisoning, The, Charles M. Swab, M. D., and Herbert F. Gerald, M. D. 438
Present Trends in Medicine, The, Arthur E. Cook, M. D. 221
Presumable Toxemias, Lloyd O. Hoffman 422
Prevention of Intracranial Injury, The, Willis H. Taylor, M. D. 510
Principles Underlying Reduction of Pain in the Postoperative Phase of Anorectal Diseases, R. Russell Best, M. D., F. A. C. S. 115
Prognosis in Surgery of the Abdomen: The Acute Abdomen, J. E. Summers, M. D. 473

MAR 22 1939
151235

Progress of Surgery, Herbert H. Davis, M. D., F. A. C. S. 45, 331
Psychological Principles Underlying Child Behavior, Some, Herman M. Jahr, M. D. 328
Purpuras, A. S. Rubnitz, A. B., M. D. 482, 518
Rabbit Ovulation Test for Pregnancy, Harry VanderKamp, M. D., A. B., M. S. 335
Recent Advances in Endocrinology, John F. Gardiner, M. D. 11, 58
Reconstruction Procedures in Traumatic Lesions of Bone and Joint Where Conservative Methods Fail, Herman F. Johnson, M. D., F. A. C. S. 234
Report of Delegate to A. M. A. Congress on Medical Education and Hospitals, J. Stanley Welch, M. D. 296
Report of Delegates to Convention of A. M. A., Philadelphia, 1931, R. W. Fouts, M. D. 337
Report of the A. M. A. Session at New Orleans, 1932, Benj. F. Bailey, M. D. 389
Restoration of Paralytic Deformities and Disabilities of the Lower Extremities, The, John Prentiss Lord, M. D., F. A. C. S. 468
Review of Forty-Seven Cases of One Sided Branch Block, Arthur L. Smith, M. D., F. A. C. P. 179
Rules of Health, The, Victor E. Levine, M. D., Ph. D. 78
Ruptured Aneurism of Abdominal Aorta Simulating Perforated Gastric Ulcer, E. A. Watson, M. D. 303
Rupture of the Uterus Through Cesarean Scar in the Second Month of Pregnancy, C. H. Waters, B. Sc., M. D., F. A. C. S. 339
Rupture of the Uterus in the Seventh Month of Pregnancy Through the Scar of the Curet Perforation, C H. Waters, B. Sc., M. D., F. A. C. S. 401
Schulte, Herman von Welchlinger: An Appreciation, Nichols Michels, Sc. D. 394
Scientific Program, Nebraska State Medical Association, Annual Meeting, Lincoln Hotel, Lincoln 177
Selection of Operation for Peptic Ulcer, The, R. Russell Best, M. D., F. A. C. S. 15
Simplified and Improved Method for Radical Amputation of the Breast, A, V. L. Siman, M. D. 207
Spinal Anesthesia (Part I), Charles H. Arnold, M. D. 189
Spinal Anesthesia (Part II), Charles H. Arnold, M. D. 230
Spinal Anesthesia, Grover C. Kirk, A. M., M. D., Sc. D., and Ralph D. Green, A. B., M. D. 286
Sudden Death Following Cisternal Puncture, B. Carl Russum, M. D., and M. William Barry, M. D. 30
Summers, John E., M. D., An Appreciation, W. J. Mayo, M. D. 134
Summers, John Edward, M. D., LL. D., F. A. C. S., by the Editor Insert, Opp. 134
Superfetation: Case Report, George M. Hansen, M. D. 530
Surgical Dynamics of Alimentation, C. A. Roeder, M. D. 165
Surgical Procedures on the Sympathetic Nervous System in the Treatment of Peripheral Vascular Diseases, Walter D. Abbott, M. D. 443
Suture of Musculo-Spiral Nerve, With Case Report, Chas. G. McMahon, M. D., F. A. C. S. 28
Therapeutic Value of Autogenous Vaccines, Philip Levey, M. D. 75
Transurethral Resection of Prostate, Thomas D. Boler, M. D. 528
Traumatic Surgery in a Rural Hospital, Charles G. McMahon, M. D., F. A. C. S. 521
Treatment of Fractures of Femoral Neck by Open Operation, John Prentiss Lord, M. D. 77
Treatment of Pneumonia, The, J. B. Pankau, M. D. 23
Uncle Sam Practices Medicine, A. L. Miller, M. D. 7
Unusual Retinal Vascular Changes in Traumatic Injury of the Chest, Angiopathia Retinae Traumatica (Purtscher), Wm. H. Stokes, M. D., F. A. C. S. 60
Ureteral Calculi, Arbor D. Munger, B. Sc., M. D., F. A. C. S. 192
Urethral Caruncle, D. T. Quigley, M. D., F. A. C. S. 201
Urticaria Solare, L. J. Owen, M. D. 254
Use of Pedicled Flaps and Skin Grafts in Reconstructive Surgery of the Head and Neck, The, Frederick A. Figi, M. D. 361
Wayside Gleanings of a Pioneer Surgeon, John E. Summers, M. D. 146

AUTHORS

Abbott, Walter D., M. D. 54, 293, 443
Andrews, Clayton, M. D., F. A. C. S. 106, 434
Arnold, Charles H., M. D. 189, 230
Arrasmith, W. J., M. D. 486
Bailey, Benjamin F., M. D. 389
Barry, M. William, M. D. 30
Bean, Francis J, M. D. 234
Bessesen, Daniel H., M. D. 32
Best, R. Russell, M. D., F. A. C. S. 15, 115
Boler, Thomas D., M. D. 528
Buckley, F W., M. D. 280
Buis, John, M. D. 197
Clarke, Floyd S., M. D., F. A. C. P. 283
Conrad, A. A., M. D. 49
Cook, Arthur E., M. D. 221
Covey, George W., M. D. 448
Crile, George W., M. D. 153
Davis, Edwin, M. D. 224
Davis, Byron B., M. D. 372, 425, 477
Davis, Herbert H., M. D., F. A. C. S. 45, 331, 525
Davis, Homer, M. D., F. A. C. P. 98
Dragstedt, Carl A., Ph. D., M. D. 93
Emmert, Max, M. D. 253
Figi, Frederick A., M. D. 361
Fouts, R. W., M. D. 337
Freeman, Leonard, M. D. 159
Gardiner, John F., M. D. 11, 58
Gentry, W. J., M. D. 383
Gerald, Herbert F., M. D. 438
Green, Ralph D., A. B., M. D. 286
Hansen, George M., M. D. 530
Hansen, N. E., M. D. 197
Heagey, Francis W., M. D., F. A. C. P. 431
Hill, Frederick C., M. D. 397
Hoffman, Lloyd O. 422
Hohlen, K. S. J., M. D. 436
Ivy, A. C., M. D. 317
Jahr, Herman M., M. D. 109, 328
Johnson, Herman F., M. D., F. A. C. S. 234
Judd, J. Hewitt, M. D. 195
Kinsella, Thos. J., M. D., F. A. C. S. 269, 321
Kirk, Grover C., A. M., M. D., Sc. D. 386
Korol, Ephriam, M. D. 101
Kuncl, Joseph, M. D. 206
Langfield, Elizabeth Ash, M. A. 113
Lee, H. D. 250
Levey, Philip, M. D. 75
Levine, Victor E., M. D., Ph. D. 78
Long, F. A., M. D. 133, 151
Long, F. A., M. D. (Editorials) 38, 86, 128, 173, 215, 261, 310, 353, 408, 459, 498
Lord, John Prentiss, M. D., F. A. C. S. 77, 468
Luce, Roscoe P., M. D. 334
Lynch, J. Harold, M. D. 71, 334
McGee, John W., M. D. 397
McGoogan, Leon S., M. D. 419
McMahon, Chas. G., M. D., F. A. C. S. 28, 521
Macrae, Donald, Jr., M. D. 161
Maloney, Edward S., M. D. 205, 452
May, W. J., M. D. 134
Michels, Nichols, Sc. D. 394
Miller, A. L., M. D. 7
Moon, Charles W., M. D. 417
Moon, Louis E., M. D. 289
Moore, C. G., M. D. 489
Moore, Clyde, M. D. 513
Morgan, Harold S., M. D. 386
Munger, Arbor D., B. Sc., M. D., F. A. C. S. 192, 381
Munger, I. C., Jr., M. D. 20
Niehaus, Frederick W., M. D. 365
Orr, H. Winnett, M. D. 18, 200
Owen, L. J., M. D. 254
Pankau, J. D., M. D. 23
Quigley, D. T., M. D., F. A. C. S. 201
Reinhard, O. A., M. D. 1
Rich, Charles O'Neill 250
Rivers, Andrew B., M. D. 465
Roeder, C. A., M. D. 165, 275
Romonek, Philip L., M. D., F. A. C. S. 238
Rubnitz, A. S., A. B., M. D. 482, 518
Russum, B. Carl, M. D. 30, 446
Sage, Earl C., M. D. 250, 413
Sanderson, D. D., M. D. 400
Shearer, Wm. L., A. B., M. D., D. D. S., F. A. C. S., F. A. C. D. 66
Siman, V. L., M. D. 207
Smith, Arthur L., M. D., F. A. C. P. 197
Stark, Lucien, M. D. 452
Stokes, Wm. H., M. D., F. A. C. S. 60
Summers, J. E., M. D. 135, 146, 473
Swab, Charles, M. D. 438
Taylor, Willis H., M. D. 510
Thomson, J. E. M., M. D. 324
Tyler, A. F., B. Sc., M. D. 185
VanderKamp, Harry, M. D., A. B., M. S. 335
Vanzant, Frances R., M. D. 465
Waters, C. H., B. Sc., M. D., F. A. C. S. 40, 253, 339
Watson, E. A., M. D. 303
Wegner, E. S., M. D. 377
Welch, J. Stanley, M. D. 296
Whitham, Roy H., M. D. 20
Young, G. Alexander, M. D. 505

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CONTENTS

Page

Some Practical Points in Allergy, O. A. Reinhard, M. D. 1

Uncle Sam Practices Medicine, A. L. Miller, M. D. 7

Recent Advances in Endocrinology, John F. Gardiner, M. D. 11

The Selection of Operation for Peptic Ulcer, R. Russell Best, M. D., F. A. C. S. 15

The Importance of Primary Treatment in Fractures, H. Winnett Orr, M. D. 18

Avertin Anaesthesia, Roy H. Whitham, M. D., and I. C. Munger, Jr., M. D. 20

The Treatment of Pneumonia, J. B. Pankau, M. D. 23

Suture of Musculo-Spiral Nerve, With Case Report, Chas. G. McMahon, M. D., F. A. C. S. 28

Sudden Death Following Cisternal Puncture, B. Carl Russum, M. D., and M. William Barry, M. D. 30

The Character of Labor—Its Influence on Puerperal Infection, Daniel H. Bessesen, M. D. 32

Page

EDITORIAL—

- The Year Ahead 34
- Annual Dues 34
- Papers for Annual Meeting 34
- Medical Organization and the New Year 34
- The Shoulders Disability Insurance Plan for Veterans 35
- President Stark Looks at Malpractice Suits 36
- The Genesis of Social Insurance 37
- A Suggested Diagnostic Test for Cervical Cancer 38
- The Sioux Valley Eye and Ear Academy Meeting 38
- Diagnosis and the Doctor 39
- The Edwin Smith Surgical Papyrus X 39
- Proctologic Hint No. XV 39

Editorial Paragraphs 39

Necrology 41

Auxiliary Notes 41

The Societies 42

Human Interest Tales 43

SOME PRACTICAL POINTS IN ALLERGY*

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PRESENT STATUS—DEFINITION AND CLASSIFICATION

For the year 1930, the *Quarterly Cumulative Index Medicus* listed more than six hundred published articles and papers on the subjects of Anaphylaxis and Allergy, Asthma, Hay Fever, and Food Allergies. Several new editions and text books(1) on Allergy have been published during the past year. In November, 1929, the first number of *The Journal of Allergy* was published. In the past few years Allergy Clinics have been established in most of our medical schools.

Previous to the beginning of the twentieth century little was known concerning the etiology or the specific treatment of such diseases as hay fever, bronchial asthma, migraine, specific eczema, urticaria and angioneurotic edema, and certain food allergies. During the past twenty years, much has been learned concerning them. Marked advances have been made in the etiology, diagnosis and treatment of allergic manifestations. Early American leaders in the study of these diseases were Koessler, Coca and Cooke. At the present time there are many others contributing to the study of Allergy.

Among clinicians the term Allergy is employed to designate conditions of specific hypersensitiveness, exclusive of anaphylaxis in lower animals. The term Allergy(2) means altered reactivity of the body cells. It is generally used in preference to such terms as anaphylaxis in man, specific hypersensitiveness, idiosyncrasy, atopy, serum disease, and the tuberculin type of bacterial allergy. In his etiological classification of the phenomena of specific sensitiveness, Coca(3) uses the word allergy to designate all forms of specific sensitiveness excepting anaphylaxis in lower animals. He states that there is, however, a necessity of such terms as atopy(4), and serum sickness, since atopy includes only those conditions of the human hypersensitiveness that are controlled by a special hereditary influence; such as bronchial asthma, hay fever, specific eczema and certain food and drug allergies. Atopy does not include serum disease, certain food and drug allergies, and the bacterial allergies.

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Under the heading of allergy there is classified a group of illnesses which differ in their clinical manifestations but which have similar etiological factors and show similar pathological changes in the body cells. The following diseases are usually included in this group: seasonal and perennial hay fever, bronchial asthma, specific eczema, urticaria and angioneurotic edema, migraine, and some forms of epilepsy, and certain types of gastro-intestinal disturbances. These diseases or illnesses are caused by inert matter in a hypersensitive individual, and should be grouped together just as diseases caused by bacteria are grouped under infectious diseases.

ETIOLOGY

There are two factors which seem quite important in the origin of the sensitiveness of the body cells to foreign matter or agents. Most important, perhaps, is heredity, by which an individual is already sensitive to or may easily become sensitive to foreign inert matter. A second factor is the repeated intermittent exposure to large doses of foreign matter, thereby developing a sensitiveness. In a study of one thousand cases of hay fever and asthma, Balyeat found that 60% gave a positive history of allergy in the maternal or paternal side of the family. In a similar study of migraine(5), 85% gave a positive history of allergy in the family.

The direct etiological factors(2) or the exciting agents of allergic manifestations are (1) known proteins such as serum, foods, animal epithelium, dusts, and pollens, and possibly tuberculin and the products of other bacteria; and (2) agents of unknown chemical nature such as drugs and poison ivy.

Contributing factors in the etiology may include chemical irritants, light, heat, cold, humidity, emotional disturbances, physical exhaustion, mental fatigue, nasal defects, defects in endocrine secretion, faulty metabolism and diseases in the alimentary tract and liver.

PATHOLOGY

The pathology(6) of allergic diseases is rather characteristic and uniform. In the various diseases spasm of smooth muscles, stimulation of glands and mucous secretion, increased permeability, and dilatation of the capillaries with congestion, edema and eosinophilic infiltration are produced. Such pathology may occur in almost any tissue in the body but the most common tissues to be involved are the skin, the respiratory tract and the alimentary tract. Hansel has recently made an extensive and interesting study of the histo-pathology of the nose and sinuses in allergy. In migraine Balyeat thinks that there occurs an urticaria or hives of the brain. Due to the uniformity of pathological findings in the various allergic manifestations, it is assumed that there is a common end product which results from a variety of reactions. It is assumed that the reaction on the cell surface produces a cell injury with the liberation of histamine-like substances which are normal constituents of the cell contents.

Further discussions of the mechanism of allergy are extremely interesting but more or less theoretical. Consequently they will not be included in this paper.

INCIDENCE

Recent surveys show that from 1% to 15% of the people are affected with allergic manifestations to a slight or marked degree. Balyeat states that about 7% of the population of the United States are sufferers of allergic conditions; Duke states that about 15% are affected. Rowe estimates considerably over 1% as allergic. Rackemann and Colmes estimate the general incidence of hypersensitiveness at 1%.

Incidence undoubtedly depends on the geographical location to a large extent. The incidence in Nebraska would more likely be near or slightly less than the estimate of Duke and Balyeat, namely, from 7 to 15 per cent. Our records show that in over 23,000 case histories, less than 3% had a diagnosis of one of the allergy group.

RECOGNITION OF THE ALLERGIC INDIVIDUAL

With this evidence, several questions naturally arise in one's mind. How is one to recognize the allergic individual? Are there any common features in the physical make-up of allergic patients? What are the symptoms and manifestations of allergy? How is one to make a diagnosis of allergy and especially a specific diagnosis of the exciting agent, causing the patient's symptoms?

There are apparently no common features in the physical make-up of an allergic individual and one could hardly make an immediate or snapshot diagnosis of allergy except in a few rather marked acute or prolonged chronic cases.

In every complete examination, regardless of what the patient's complaints may be, there should be included in the history a question or two whether the patient himself or his parents or brothers or sisters have had hay fever, asthma, migraine (sick headache), eczema, hives, or frequent gastro-intestinal upsets.

If the complaint includes symptoms suggestive or characteristic of allergic manifestation, then leading questions in regard to possible other allergic symptoms should be asked. A detailed allergy history should be obtained, and in the physical examination, one should look for other stigmata of allergy. Symptoms and clinical findings of allergy may result from the involvement of many body structures and are consequently many and varied.

Some of the most common complaints, symptoms and findings are the following:

Eye, Ear, and Respiratory Tract: Coryza with puffiness, congestion and itching of the eye lids, lacrymation, edema and hyperemia of the conjunctiva, scotomata, blurred vision, orbital headache; itching in the auditory canal, the roof of the mouth and on the posterior wall of the pharynx; sneezing, pale swelling (water logged) of the nasal membranes and a clear watery secretion from the nose. Sudden obstruction of nose with or without fever; sinus infection secondary to nasal obstruction and poor sinus drainage. Cough, hoarseness, wheezing, expectoration of a clear mucoid sputum, recurrent attacks of bronchitis.

Skin: History or presence of eczema, urticaria or angioneurotic edema; itching, erythema and dermographism.

Gastro-Intestinal: Anorexia and food dislikes, coated tongue, attacks of abdominal pain especially in the upper right quadrant, nausea and vomiting, distention, belching, diarrhea, and mucous colitis. The symptoms may be independent or associated with respiratory and skin manifestations, or sick headache.

Neurological: Headache (sick headache), especially in the temple or orbital region and often unilateral—usually associated with nausea; paresthesia, anesthesia, irritability, dizziness, convulsions, psychic disturbances.

Miscellaneous: Weakness, fatigue, muscular aching, intermittent hydrathrosis; renal colic and irritable bladder.

A very important acute serious symptom is *shock*. The onset is usually sudden and requires immediate diagnosis and treatment. It is characterized by generalized itching and erythema about the head and neck, sneezing, cough, difficulty in breathing and collapse.

The most common and constant laboratory finding is an eosinophilia(7).

The severity of the symptoms depend largely on the degree of the sensitiveness of the individual and upon the frequency of contact and the size of the dose of the causative allergen. These symptoms may be localized or generalized and may simulate many other diseases. Consequently allergy must be considered in the etiology and diagnosis in many of the diseases encountered by the general practitioner and the specialist.

ALLERGY HISTORY

A patient complaining of or presenting some of the above symptoms or manifestations, with or without a history of allergy in his family, might be considered an allergic individual. In such a case a more detailed and comprehensive allergic history should be obtained. Such a history should include additional information in regard to the occurrence of allergic diseases in the patient or his relatives. It should also include detailed information on the following: (1) Onset, duration, frequency, severity and time and duration of a typical attack; (2) food associations; (3) epidermal association from animals, birds, insects, animal parasites, furs, bedding, furniture, clothing, etc.; (4) occupational associations; (5) seasonal associations as to time of year or weather change; (6) plant, mould(8), weed, and pollen associations; (7) physical associations, as heat, cold, sunlight, steam, gases, etc.; (8) drug associations; (9) dust, dusting powders, and face powder (orris root) associations. All of the factors just mentioned are either foods, inhalants or external irritants.

The past history should include information in regard to (1) eczema, urticuria, angioneurotic edema or other skin rashes, hay fever, asthma, recurrent bronchitis, chronic cough, migraine, epilepsy, and intestinal upsets; (2) reactions following diphtheria antitoxin, horse serum and human serum injections, blood transfusions, pneumonia serum, tetanus antitoxin, etc.; (3) reaction to pollen or food or food extracts if such have been previously administered; (4) effect of pregnancy, menstruation or age on symptoms.

From such a detailed history, the symptoms, physical examination and laboratory findings, one usually has sufficient data to decide as to whether or not the patient belongs to the group of allergic individuals.

Assuming that a diagnosis of allergy or one of the diseases belonging to the allergy group, is made, the specific cause of the patient's symptoms should then be determined. Perhaps enough information has been obtained from the history, symptoms and findings to begin treatment immediately, but in the majority of cases skin testing should be done. Perhaps in the food allergies and in infants who have come in contact with few things, the skin tests may be omitted, but even in these cases they are usually necessary and advisable. Not infrequently does one encounter allergic patients who have been given specific treatment for hay fever or asthma and have not been first skin tested for the specific pollen or pollens. Such a procedure is certainly unscientific, dangerous, and very likely to give poor results and bring forth unjust criticism of the treatment.

SKIN TESTING

Several methods for skin testing are employed by different men and clinics and for various reasons or purposes. The scratch and intradermal methods(9) are most commonly employed, especially for the inhalant and food allergens. Of the two the scratch method is most widely used on account of its comparative safety and ease of application. The intradermal method is more dangerous and more difficult to carry out, but in most cases, especially for the foods, is a more sensitive test. A third method, the patch method(10) is less commonly used. It has been recommended as being superior in determining sensitiveness to non-protein contact excitants which may cause dermatitis. A fourth method, the passive transfer(11), is of value in the testing of infants and children and especially in experimental work.

Materials for skin testing are called allergens and may be dry or liquid extracts of pollens, animal emanations, foods, dusts, etc. These have not been standardized and some of the products on the market are of questionable value. Reliable ones, however, can be obtained. The dry extract is more stable and retains its potency for a long time. A good liquid extract is perhaps better for skin testing but it deteriorates more rapidly. For the intradermal testing the liquid extract is, of course, necessary.

Group testing may also be done. Instead of using individual allergens, similar or related ones can be grouped together and a single test made. If a positive reaction is obtained, individual tests with the allergen comprising the group can be made. Vaughn(12) has recently made a genetic classification of food allergens for such group testing.

Concerning skin testing for allergens the following axioms should be kept in mind. Skin testing must be done with the full knowledge of the technique and the interpretation of a reaction(13). There is certain danger, even with the scratch method, especially in some highly sensitive individuals. The back is a good large area for multiple tests and it is a more sensitive skin than the arm or leg. The skin scratches should be superficial and should not bleed. They should be of equal size or length. A control scratch should be made for comparison. In a highly sensitive person a limited number of tests should be made at one time. All individuals do not react to the same degree. An area of erythema in one may be just as significant as a wheal plus the erythema in another. Most individuals show multiple sensitization. A negative skin test may not always be an absolute index of the sensitiveness or the reaction capacity of an individual. Negative skin tests are more prone to occur in older individuals. The scratch test may be negative and the intradermal positive for the same allergen or the opposite may occur. The inhalants, as pollens, animal emanations and dusts usually give more marked skin reactions than the food allergens. Inactive testing material may result in negative skin reactions. The size of different reactions in the same patients should be considered; however, this does not always indicate the relative importance of the exciting agent. The importance of substances other than pollens should not be overlooked in the diagnosis and treatment of hay fever and asthma. Skin tests may still be positive, although clinical hypersensitiveness has disappeared—such tests may be indicative of past hypersensitiveness.

TREATMENT

Having made a specific diagnosis and determined the degree of sensitization of the patient, one is ready to begin specific treatment. In instances where the specific allergen has not been determined, which is fairly common in the food allergies, treatment must be based on trial diets or trial elimination.

The most logical course of treatment in any case would be the elimination of the causative factors regardless of whether they be pollens, animal emanations, dusts, or physical or chemical agents. However. this is not always the most practical line of treatment. In pollen hay fever or asthma such treatment could be carried out by sending the patient to another region where the causative pollens are not found or by shutting him in a pollen free room. This is usually expensive and impractical. Consequently pollen allergy is treated by specific desensitization by the subcutaneous or intradermal injection of increasing doses of the causative pollen or pollens. The most common and important fall pollens in southeastern Nebraska are the ragweeds, western water hemp, hemp, and Russian thistle. Preseasonal, coseasonal and continuous(14) treatment may be given. Adequate treatment should be given. Desensitization should be carried out with the utmost care, as fatalities have resulted from very small injections of the extracts(15). Where pollen or seasonal hay fever and asthma are complicated by food allergy or perennial hay fever, the exciting foods must be eliminated from the diet.

Perennial hay fever (hyperesthetic rhinitis) and asthma due to orris root can be successfully treated by specific desensitization where elimination or avoidance of the same has not benefited the patient; when due to animal emanations or food, elimination of these or avoidance of contact with the inhalants is advised. However, hypodermic desensitization can also be successfully carried out. Bacterial asthma is treated by injection of autogenous vaccine of the specific bacteria to which the patient is sensitive. In a patient with negative skin tests showing a persistent perennial hay fever or asthma, the trial diets or elimination diet should be prescribed. If after fair trial of the diets, symptoms still persist, careful and diligent search must be made to determine the causative factor. Animal emanations of every type and form, dusts, dusting powders and chemical irritants, should be carefully investigated and systematically eliminated.

In all the food allergies, which may include gastro-intestinal manifestations, asthma, perennial hay fever, eczema, urticaria, migraine and some cases of epilepsy, the prescribing of the elimination diets as described by Rowe seem the most logical and practical form of treatment. Where careful skin testing has revealed the foods causing symptoms, diets eliminating these foods are prescribed. Where, however, skin tests have been negative, unsatisfactory or where no skin tests have been made, the trial diets are indicated.

Almost any one of the many foods containing protein may cause symptoms in the allergic individual, fortunately, however, a large number of cases are sensitive to wheat, eggs, and milk. The elimination or trial diets of Rowe(15) are based on this fact. The first three diets are wheat-milk-egg free diets. The fourth diet is a milk diet only. These diets are usually carried out by prescribing a balanced diet with sufficient calories containing one cereal, one bread, one kind of meat or fish, three vegetables, three fruits, jams, or fruit drinks, and a few miscellaneous items as sugar, oil, and salt. When the elimination diet is employed. Vaughn recommends that the genetic relationship of foods should be taken into consideration in selecting the diet. The patient should be kept on such a diet for at least ten days. With improvement of symptoms other foods may be very carefully added. Where no improvement is made an entirely new diet should be prescribed.

Eczema and urticaria, the chief skin manifestations of allergy, are treated much the same as the symptoms manifested elsewhere in the body. It should be remembered that eczema and asthma in infants are usually due to foods, and less commonly due to the inhalants. In the adult about 33% of the eczemas are thought to be due to allergy.

In migraine and allergic epilepsy, the predisposing factors should be eliminated in addition to the elimination of the specific foods. The patient should have plenty of rest and avoid physical exhaustion and mental fatigue. Infections and toxic conditions should be treated.

Specific treatment of the allergic individual usually must be carried out for years or a lifetime. Sensitiveness is likely to remain, especially sensitiveness to the inhalants; sensitiveness to food may be entirely overcome. In the case of foods, oral desensitization by the minute doses or particles of the offending food and gradually increasing the amount, should be tried. In infants and children this is especially indicated. Superheating of foods sometimes makes their use permissible. Treatment by specific desensitization or elimination is preferred to non-specific measures. General measures, however, are often helpful and necessary.

In shock the immediate use of adrenalin injections is absolutely necessary. In cases of hay fever and asthma with nasal obstructions or sinus or tonsil infections, surgical treatment is necessary.

Other non-specific remedies which are of value in various allergic manifestations are ephedrine, atropine, iodides, calcium, peptone, pancreatin and trypsogen, stock and autogenous vaccines. Since most allergies show an alkalosis and improve on an acid producing diet, Beckman(17) recommends acid producing diets and such acid producing drugs as dilute hydrochloric acid, acid sodium phosphate and ammonium chloride.

In addition to treating allergy in the individual, the allergic individual should always be kept in mind when treating him with therapeutic sera(18), and in blood transfusions. Many allergic patients are extremely sensitive to horse serum, and many of the therapeutic sera and antitoxins are derived from the horse's blood. Suspected or known allergic individuals should be tested out and desensitized before therapeutic sera are employed.

SUMMARY

Allergy includes a group of diseases of similar etiology and pathology.

A carefully taken allergy history is of great value in helping to make a diagnosis.

If skin testing is done it should be done with full knowledge of the technique and of the interpretation of the reaction.

Specific diagnosis by history, clinical findings and skin testing should be made before treatment is prescribed.

Specific treatment is preferred but general therapeutic measures are helpful and often necessary.

In the food allergies the elimination diets are advised where skin tests have been negative or where they cannot be carried out.

In the use of the therapeutic sera the allergic individual should be kept in mind.

On account of its many localized and general manifestations, allergy is of importance to both the specialist and the general practitioner.

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DISCUSSION

ERNEST L. MacQUIDDY, M. D., (Omaha): I want to thank the author for the opportunity to discuss this paper.

There is one thing we must consider in treating allergic individuals, and that is they are human beings and subject to the same conditions as other patients. If the allergic individual has infected tonsils or sinuses he should be treated as other people. Sometimes we become over-enthusiastic in allergy and forget there may be something else wrong with the patient.

The Doctor's paper emphasizes the point that the sinus must be considered in the etiology of asthma. It is discouraging in that we must treat them indefinitely. We get them out of one attack and they come back with another. We have only scratched the surface in our treatment of allergy. We have not gotten to the underlying principles. In the passive transfer, some work has been brought out which will give an inkling of the foundation of allergy. Dr. Cohen suggests taking the blood of the sensitive individual and diluting it one part blood to ten parts normal saline and injecting it into the arm of the normal individual. You can apply the sensitization tests and you will get the same reactions as in an allergic individual at the site of injection. He found, by injecting this diluted serum into a normal individual and putting ragweed pollen into the nose of the individual it would give a reaction in twenty minutes. In doing this on a group of allergic individuals it took two hours. Probably we have found one of the causes of allergy in the failure of absorption and production of the proper amount of antibodies. This brings out the fact that we must change our ideas. This is one piece of work which probably gets us at the foundation of allergy.

I think we must carry our work further. Our treatment is too complicated at the present time. We must find out why we have eczema of children. Is it hereditary? I hope the next few years will bring more fundamental knowledge as to what produces allergy in an individual.

EDWARD S. MALONEY, M. D., (Omaha): I wish to speak a word about the elimination diets in allergic cases. These diets consist of foods to which patients are less often allergic. Experience has shown that milk, wheat and eggs are the more common foods to which individuals are sensitive. Elimination diets exclude these foods. The patient is then placed on this type of diet for a period of two to four weeks until relief occurs. In addition a dietary diary of all foods eaten is kept by the patient and this is studied in relation to symptoms as they develop. If a certain food is found to constantly precede the onset of symptoms, this food is also eliminated from the diet. As the allergy is relieved deliberate feedings of the suspected food is undertaken. In this manner the foods responsible for the symptoms can be definitely determined. These elimination diets are very useful, especially in those cases in which repeated skin reactions are negative and where no suggestive help is derived from a dietary diary.

DR. REINHARD, (closing): There is one further practical suggestion that comes to my mind, namely the use of the sphygmomanometer, or blood pressure arm band to slow up the absorption of allergen in cases of shock following therepeutic injection. The arm band is placed proximal to the point of injection and kept at a pressure of about 100 millimeters of mercury, with occasional relief of the pressure, until dangerous symptoms of shock have subsided. This procedure is a definite aid, in addition to the use of adrenalin. Details of this procedure are described by Insley in a 1930 Journal of the American Medical Association.

UNCLE SAM PRACTICES MEDICINE*

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There has been a growing feeling of unrest concerning the Doctor, cost of illness, the hospital, nurses and the proper care of the individual who may be sick. This is evidenced by the numerous articles written by both medical men and laymen concerning the different phases of medicine. Many of these articles written by laymen are biased and do not give the proper light upon the practice of medicine. This afternoon I wish to give a brief resume of these articles.

The committee appointed to investigate the cost of medical care are now sending out some very valuable information regarding this phase of illness. I feel sure that when this investigation is completed and the facts are published, it will all react favorably to the physician and hospital. There have been some medical men who are not in sympathy with this investigation. They do not wish to have the light of public criticism thrown upon their endeavors. Organized medicine should take the stand that if their endeavors and what they are doing cannot stand the full and blazing light of public criticism, then something must be wrong and should be changed. I do not feel that it is possible or wise to try and cover up the dealings of the medical fraternity any longer. The public is making many of their own diagnoses. They know when an operation is needed. They know the symptoms of many of the acute contagious diseases. They are quick to note the disagreements that might occur in court procedures where expert testimony is called for. Anything that effects the health of the individual, effects the health of the community; and that is perhaps one reason why the public and industry is so greatly concerned and agitated in the care of the individual who may be sick.

There has been a marked feeling of dissatisfaction and unrest in industry concerning the proper care of employees. We, as medical men, must present a united front and solve our own problems, or be faced by the handling of these problems by Uncle Sam or some form of State Medicine. State Medicine, which seems to loom so large upon the horizon of the medical field, and which is now gradually edging into your practice in the way of soldiers care with no regard for origin of illness; care of government employees; child welfare work; maternity bills; free clinics; hospitals for the tubercular; for the insane; university hospitals; state hospitals and county hospitals for the crippled and for the feeble minded and several other sinister undertakings by some branch of the government, are not welcome visitors.

We cannot afford to have the government solve these problems for us, for when you take the individual incentive out of the job and pass it on to the desks of the public office holders, it becomes a costly, priceless activity. Costly in more ways than money. If taxes were all, we being rich could stand the pressure; but the wickedness of government operations is a charge against individual endeavor. The right of each citizen to strive and stumble and arise and strive again for that recognition and reward that comes to the successful. Government operation of medicine will destroy that zeal of accomplishment, that incentive for individual reward and individual merit.

When our forefathers in Philadelphia 140 years ago conceived this government, they made no provision that a government should operate business enterprises, and I say to you that the checks and balances that tend to give you life, liberty and the pursuit of happiness, as outlined by the founders of this government, tend to prevent efficient operation in business. They simply are not compatable and the sooner we understand these conditions, that the government's finger in business will destroy that something that we have come to work for and expect in our laws, and destroy that respect for laws, the sooner then the government will get out of business. The thing we medical men must decide is, do we need more federal machinery, more state machinery and greater restrictions in the practice of medicine. The government always restricts; it cannot promote. It is not built that way. Government moves slowly; we would not have it otherwise. The operation of state medicine would lack initiative. I feel that the government should be merely an umpire to guarantee fair play, and the race should be to the citizen and the risk should be to the citizen and the reward should come to that citizen.

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From an economic standpoint, the health of the people is of highest importance to the progress of industry and business. Industry and business suffer great financial loss every year due to the illness of its employees. The health of a nation is of vital concern to its government and this health has always been an asset of the greatest value. Government has been more and more concerned with the health, not only of its employees, but of all its citizens. Through the Veteran Bureau act, the government has entered into direct competition with the private physician and hospital. Through that act, the government will take care of the veterans of any war, regardless of the nature of his illness or its connection with services to the government. Laws have been proposed that would also include the care of the veteran's family, his wife, his children and his relatives, and government employees. Through this veterans act, the government has pauperized more than five million men. This thing produces a tendency to lean upon the government for support.

Our democracy was founded upon self government and this is dependent upon a strong and well informed people, trained in the habits of self assistance. With the veteran's act, the government assumes the guardianship of its people and coddles them by furnishing free medical services, hospital services, doles and compensations. This prevents making strong men and women trained to rely upon their own individual efforts.

It is now costing our government millions of dollars to shepherd its people from birth, through life and into the grave. The government has entered into direct competition with the physician and hospital through their various agencies; and if this continues, it will be a sad day for America when their government uses its great powers and unlimited resources to compete in business with its own citizens. The government in business can confiscate the property of its citizens by destroying private business; and it does this by taking your money through taxation to promote and support university and state hospitals and veteran's hospitals.

Physicians and private hospitals even now are competing with the federal government for the practice of those disabilities that have not originated in government service and by those people who are quite able to pay for their services. State medicine, government medicine and socialized medicine in some form or other is being operated through various channels, and if it continues, the majority of people and physicians will become a cog in some vast government machine. Socialize the practice of medicine as you will do under state medicine and the best men you have will seek other lines of endeavor, if they have any left, where their talents and abilities are unhampered by government control and restrictions.

The medical profession has been surrounded by numerous restrictions. Drug restrictions, narcotic restrictions, alcoholic restrictions and in this State of Nebraska, restrictions regarding the giving of information regarding birth control.

The Birth Control League of America has been shaping public opinion and some day will cause these foolish laws to be repealed. Birth control cannot be practiced by those who should most do so. It is the uneducated, perhaps ignorant individual with just a job and poor prospects, that lives in a hovel, who raises a large family that so often become a charge of the state. There should be some way to control the coming of children in the families that are not in a position to raise the children to become useful citizens to society. I do not shut my eyes to the fact that there are many great men that have come from large and poor families, but I insist that these men either had great fathers or mothers or inherited something that left a mark in their lives. They are exceptions. Just why some poor uninformed mother should be permitted to bring children into life that will probably be a burden to the state, or why she should give birth every 15 months and thus ruin her health, making her incapable to care for her children is more than I can conceive. I feel that it is a duty of the medical profession, unhampered by foolish legislation to so control this through their own organization, that proper individuals can be raised into citizenship.

The days of isolation in medicine are over. You can no longer with impunity hide your light under the bushel. Organized medicine must have some degree of appraisal of itself, and then it must meet its obligation to the public, and if we do not, then we may expect some other organization to do this for us. We have been too prone to organize, to protest and try to protect ourselves from the invasion of the practice of medicine by other agencies. It is time that we take a re-appraisement of ourselves and determine if our relations with the public are such that they will bear the closest scrutiny. We, as medical men, should assume leadership in this changing medical field, for there is surely an irresistable change coming in the practice of medicine, whether we will or not. It behooves us to keep a satisfactory position in public opinion. Too many of us have been pulling back on the collar. We have tried to protect ourselves against this on-coming tide of public opinion and we have not stopped to try and analyze the way out. Medical men and groups can no longer gracefully or with the support of public opinion fight proposal of the state and lay agencies, for the betterment of medical conditions. I do not mean by this, that we should sit back and do nothing, but that we should assume leadership and see that laws are passed that will not be a detriment to the public health. We should see that the rights of the patient and the public is protected. Who else, may I ask, has the proper and intelligent training to assume leadership except the medical men. These are medical problems and should be solved by our own profession. The medical profession can never cure the ills that it complains of by fighting public opinion and not offering some solution to those pressing problems. Public opinion is the all-powerful tide, sweeping before it all opposition and we cannot gracefully and without criticism assume a hostile attitude toward this tide. I feel that we should have a constructive, receptive attitude toward these changing times. The economic distress that the world has recently been going through will probably hasten the time when we will have compulsary health institutions, old age pensions and adequate medical care by the state, the county or state medical society, and the individual that does not arrange its relations to be in harmony with these new and changing conditions is not meeting its proper public obligation and they are only laying a foundation for further disturbance in the practice of medicine. Medical men and society can help shape and mold public opinion so that it will run a proper course and the way everyone of you would have it done. Medical men should certainly handle medical problems. and if you are not assuming leadership, then it is your own fault.

Industry and commerce continually take appraisal to ascertain if its methods are obsolete or need a change. They frequently take inventory and are looked over by efficient experts and then these obsolete practices are abandoned. Is it not time that the medical profession also take appraisal of itself and have it audited by an efficient expert and thus eliminate practice and conditions harmful to this profession. Would they not in this way bring about a better understanding between government and the practice of medicine?

If the medical profession presents a united front, I am sure we will hear less talk concerning state medicine. It was truthfully written years ago that the world steps aside for that man, or group of men, who knows where he is going, and if we present a united front, or succeed in coping with state medicine, that will be one of the most luminous chapters written in medical business history.

The federal government at Washington will help you build a hen house; teach you how to train grocery clerks; how to raise beans, potatoes or any other growing thing; tell you how to hang the curtains in your home and pack the school boy's lunch. The other day I was reading a magazine article that spoke of the good work of the government. It told about a young woman that wrote the Department of Labor and asked how much castor oil she should give her six months old baby. Now, you would have thought that the majestic federal government would have been "flabergasted" by such a request; but oh no, not so. This request was handed to Secretary Davis of the Labor Department and to the Department of Public Welfare and then to the Division of Child Welfare and the article states that within 24 hours, this anxious mother had a letter on the way, telling her how much castor oil to give her baby. Yes, verily friends, from the Panama Canal to the alimentary canal. Our law making bodies would again try to have the government supervise, pass and make effective a maternity bill and at the same time run a three billion dollar Merchant Marine.

Medicine has progressed from the dark ages; from that instinctive witch craftery, herb stewing, song chanting period to the scientific age and a direct understanding of disease. These dreaded diseases are giving up their secrets and yielding to men. Things are being done that never could have been accomplished, were the individual hampered by governmental restrictions. State medicine will destroy that individualism that has made our forefathers so strong and resourceful.

There is a decisive contrast in the incentive of government controlled business and private controlled enterprises, and I believe that you have all observed this at one time or other. The private manager must at least make the income of his business equal the expenses of his business, or he probably would be fired by his directors. With the government in business, it is different. The fear of being put out of a political job of course is ever present, but it is not linked with the fear of waste, inefficiency, or bankruptcy. He knows the government will not go bankrupt, as long as it has power to levy taxes, and there is more property on which to levy taxes. State medicine will increase our taxes.

It is my firm belief that if we continue to have and make government restrictions in the practice of medicine, the initiative and incentive will be gone. There will be no deep seated desire on the part of the individual to make further research discoveries. No more Gorgases, Jenners, Mayos, Babcocks, Wassermans and a host of other medical men will ever appear on the horizon to further advance in the fields of scientific medicine. We cannot afford to lose the economic independence of the individual. Calvin Coolidge aptly said that if the people are to remain politically free, they must remain economically free.

We are at the cross road in the practice of medicine. There has been a growing agitation for us to detour, to leave the road by which the efforts of the individual has brought us medical prominence, to detour down unpaved roads where there are no guide posts and lead to no certain destination. Either organized medicine will solve these problems that confront us, today, or they will be solved for you by Uncle Sam.

DISCUSSION

F. B. YOUNG, M. D. (Gering): It is pleasant to come here and hear our members discuss economic and professional problems of the profession, as has been done by many. We are at the crossroads of medicine. Dr. Miller bemoans the fact that state medicine is coming. Gentlemen, it is here. We have our public health activities, state laboratories, state compensation commissions, the Sheppard-Towner activities, and many more that are really state medicine. Let us quit talking about its coming, because it has already come. It is up to the medical profession to direct these things, and see how far we can go in certain lines, and why and where we should stop. These are things the medical profession can do.

The unfortunate thing about these meetings is the fact the men who need them the most are not here. We have about 400 here, and there are about 1800 physicians in Nebraska. Out of the one in four here, there are more than half who take no interest in the activities of the meeting. I bob in and out myself, thinking to hear only those papers and discussions in which I am particularly interested. That is not right to the man who presents a paper. We are not meeting our duties to the profession in any way, or rising to the opportunities that present themselves, any more than rising to the opportunities that present themselves as shown in this paper. We must study out these problems, and drop the obsolete, and take up the new. We must teach the people to understand the various factors involved in the practice of medicine because, superficially, at least, people are better educated. There is a large element who are taking advantage of it—people opposed to the medical profession—and we have been making no effort to combat it.

We come to these meetings and talk like we are going to do things. I go home and see people who are sick and treat them. You do the same. That's all. We must influence our own community, state and nation. We must have a definite organization, so that when the meeting of our county medical society is called, instead of four or five coming out, we will have twenty to one hundred. Until we do that, we are getting nowhere. We should have an annual meeting of a thousand. Every man should take an active interest. Until we do that, we will not meet the responsibilities of our own profession.

There is one thing I think would go farther to promote medical organizations than anything else I can think of. That is for the American Medical Association to appoint a Field Secretary whose whole duty would be to contact the medical profession all over the country, visiting two to eight points in each state each year, study the problems, and report these problems to the governing bodies of our National Association, and confer with the state officers. Let the Field Secretary contact the man in the hills as well as the city man, and carry to him the inspiration for better medicine and surgery, better study, more honesty, and a more efficient, active organization to meet our obligations.

I thank you.

MENTAL HYGIENE AND ITS RELATIONSHIP TO THE MEDICAL PROFESSION

Lloyd H. Ziegler, Albany, N. Y. (*Journal A. M. A.*, Oct. 17, 1931), reviews briefly the history of the mental hygiene movement in the United States and presents the results of interviews among 103 physicians practicing medicine and surgery relative to their interest and problems in neurospsychiatry. He believes that there is need and desire for more knowledge of mental hygiene among these practicing physicians and that mental hygiene is part of a public health movements, depending on knowledge and education in which the medical profession of the future will be required to take a larger responsibility.

RECENT ADVANCES IN ENDOCRINOLOGY*

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The recent progress made in the study of endocrine functions after many years in which the dead line seems to have been reached, is both encouraging to the laboratory investigator and a source of promise to the practical clinician. The existence of clinical syndromes that were hitherto unsuspected. are now being revealed from a study of the activity of the extracts of various endocrine glands. While we have long been familiar with the deficiency syndromes as seen in Addison's disease, diabetes, and in parathyroid tetany; the opposite of these long known states, or the condition of hypersecretion, or overfunction of the adrenal medulla, pancreatic islets, or parathyroids have until now escaped recognition.

HYPEREPINEPHRINISM

We are well aware that anatomically the adrenal glands consist of two distinct portions, the cortex and the medulla. Embryologically these distinct units have different origins; they are structurally different and their function, as far as we know, is independent. At the present time endocrinologists are of the opinion that two independent groups of American investigators, Swingle and Pfiffner(1) of Princeton University, and Hartman(2) and his collaborators of the University of Buffalo, have isolated a cortical hormone which will be of specific clinical value in cases of cortical insufficiency, or as popularly known, Addison's disease. The hormone of the medullary portion, we are well acquainted with under the name "epinephrin".

Endocrine writers have long been aware that tumors of the cortex usually give rise to masculine characteristics in girls and percocious puberty in boys. The isolation and study of this new cortical hormone is largely awaited to prove or disprove the theory that an excessive secretion of cortical hormone is responsible for these characteristics.

Tumors of the medullary portion of the glands have only of recent times been associated with distinct characteristics, the principal one of which is a paroxysmal hypertension.

French writers(3) in 1922, reported the first case of paroxysmal hypertension in a woman 28 years of age, who over a period of months suffered from spells of nausea and vomiting, cold extremities, bloody urine and a blood pressure rising from 150 systolic to 270 or over. An attack terminated in pulmonary oedema with death. Necropsy revealed a tumor of the medullary portion of the left adrenal.

Wilder(4) in an excellent summary of our data to date of this syndrome. states that the most significant observations of the associations between medullary tumors and paroxysmal hypertension were those made by C. H. Mayo(5) Pincoffs(6) and Shipley(7). The Mayo case, a woman of 30, suffered from attacks of palpation for over a period of nearly two years. They occurred nearly daily and were accompanied by nausea, vomiting, cold extremities, precardial discomfort and headaches. Cough with expectoration and blood tinged saliva frequently occurred. The blood pressure would arise in the attacks from normal values to 280/110: Because of diffuse abdominal pain and on the theory that a lesion of the splanchnic nerves might account for the hypertension and pain, an exploratory laporatomy was performed at which a medullary tumor of the left adrenal was found.

The patient of Pincoff's had a very similar history: The patient, a woman of 26, complained of frequent attacks of palpation accompanied by a sense of tightness over the heart, associated with dyspnea, nausea, vomiting, occasional diarrhea and cool extremities. The blood pressure would arise from normal to over 250 systolic in the attacks. At operation a medullary tumor of the right adrenal was found. Adrenalin was isolated from this tumor.

The clinical features presented by these patients during the attacks are apparently exactly similar to those resulting from injections of epinephrin. In both of these cases, removal of the tumors was followed by a complete recovery from the attacks of hypertension and other symptoms. Both patients are in excellent health.

It is felt that when this viewpoint of certain types of hypertension becomes better known to the medical profession, many more cases will probably be brought to light.

HYPERINSULINISM

Undoubtedly the foundation for our ever-increasing knowledge in pancreatic disorders associated with disturbances in blood sugar, was laid by Banting and Best(8) in their discovery of insulin in 1920-1922.

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*Read before annual meeting, Nebraska State Medical Association, Omaha, May 12-14, 1931.

Fletcher and Campbell(9) in 1922 gave us a complete study of the clinical effects of an overdose of insulin. These symptoms in brief were: Periodic attacks of faintness, tremor and blurred vision, mental confusion and coma; convulsions and death being possibilities as the blood sugar reached markedly low levels.

Harris(10) in 1924 was the first, however, to suspect the possibility of hyperinsulinism in cases in which insulin had not been administered. He observed in several cases an abnormal lowering of blood sugar and certain symptoms (weakness, exhaustion, etc.), resembling those seen in diabetic patients after overdosage with insulin.

Wilder, Allan, Power and Robertson(11) in 1927 gave the first definite pathological basis for this condition in a case studied in the Mayo Clinic. Their patient, a man of 40 years, had attacks of loss of consciousness with convulsions if he failed to receive sugar every hour during the day and night. These attacks at first were mild and began about 18 months before entering the clinic. The blood sugar in the attack would fall to extremely low levels such as 27 and 31 milligrams per cent. Shortly before death, his glucose intake averaged 1,000 grams daily. It was demonstrated at necropsy that the hypo-glycemia was due to over-production of insulin from carcinoma of the pancreatic islands. Since that time, numerous other cases have been reported, the majority of which have been verified by operation or necropsy.

McClenahan and Norris(12) in January, 1929, reported a case in which periodic attacks of unconsciousness, or loss of memory occurred. Just prior to his death, the patient was admitted to a hospital in coma, with a blood sugar of 40 per cent milligrams, which remained low in spite of dextrose administration until his death, 70 hours later. At necropsy, a tumor of the pancreatic islets was found. There was also considerable hypertrophy of the remaining pancreatic islets.

Thalhimer and Murphy(13) in July, 1928, reported a case of slowly increasing severity associated with stupor, convulsions and hypoglycemia. Necropsy revealed a pancreatic islet-tumor.

The first attempt at surgical treatment on this now recognizable syndrome was carried out by the Finneys(14) in 1928. At operation, the pancreas seemed normal in size, shape and consistency. A portion of the pancreas weighing 22½ grams was dissected. The microscopic appearance was normal. The patient has since been somewhat benefited. It was thought that probably better results might have been had if more pancreas had been removed.

One of the few cases in which complete relief was obtained by operation was that reported by the Toronto Group(15) in August, 1928. The patient, a woman of 52, had been subject to attacks of loss of consciousness and convulsions for a period of seven years. The attacks became more frequent and it was noticed that if food was taken at their first appearance, the seizure might be avoided. Later this was not so successful, as the attacks might occur as the patient was sitting down to eat. In the attacks, the blood sugar would fall to 40 milligrams for each 100 c.c. At operation, a small tumor was removed from the body of the pancreas. This tumor under the microscope consisted of masses of cells, similar to those in the islands of Langerhans. Since operation the patient has been free of seizures, and has a normal fasting blood sugar.

The occurrence of hyperinsulinism is not limited to cases associated with tumors or with hypertrophy or hyperplasia of the islands. A number of cases are on record, as the case of the Finneys(16) and the cases reported by Allan(17) of Rochester, in which there was no demonstrable change in the anatomy of the islands. It has been suggested that probably many of the milder cases are of this type. In such cases over-production of insulin may depend on stimulation by a harmonal or nervous mechanism.

When we realize that cases of diabetes may exist without any recognizable changes in the islands of Langerhans, it is not illogical to assume that the opposite condition may happen. While the symptoms of hypoglycemia have quite a variation, they are not usually difficult to recognize. The most pronounced feature being the prompt relief which follows the intake of carbohydrates. The majority of patients learn by experience that frequent eating helps check the symptoms. On obtaining a history of this description, that is, faintness or weakness followed by convulsion and coma, a blood sugar will verify the diagnosis. With the exception of advanced cases of hepatic diseases we are usually right in assuming that hypoglycemias are the result of over-function of the pancreas, rather than failure of the liver. The use of epinephrin and solution of pituitary extract which do not produce a rise in blood sugar in disturbances based on liver pathology and the amount of sugar required to prevent hypoglycemia (being much greater in liver disturbances), are a great help in differential diagnosis between a pancreatic or a hepatic hypoglycemia.

In the treatment of this condition, it has been observed that even though the patients receive carbohydrate food in large amounts. properly spaced to maintain a normal blood sugar, it is not possible for the patients to exist with any degree of comfort. A break in their intake of food routine, or unusual exertion may bring on loss of consciousness, while broken sleep is the rule. Medical treatment, while it may give some relief, is not of great value. Epinephrin, ephedrin and pituitary solution have only transitory effects. It has been suggested that treatment with thyroid substance may counteract to some extent the overaction of insulin, since hyperthyroidism in association with diabetes reduces the effectiveness of insulin. Ether anaesthesia has delayed the fall in blood sugar several hours. When the patient is an invalid from this marked hypoglycemia, surgical treatment is justified. If the condition is due to a localized tumor, complete cure should follow its removal. If the condition is due to a functional disturbance, that is, overactivity of the whole gland, the probabilities are that if sufficient gland were removed, nearly complete relief might be obtained.

It is not improbable that many cases are being misdiagnosed under such labels as hysteria, neurasthenia, epilepsy, etc. Finney's(18) case was diagnosed as of psychogenic origin by psychiatrists of ability. Cases of violent deleria with sleep disturbances necessitating being confined in a strait-jacket, have been observed. The fate of a patient observed by Hartman(2) deserves comment. In 1924, this patient made the statement to Hartman that, "If I do not eat every two hours, I have a spell and lose my mind". Later it was learned that the patient had been admitted to a state institution for epilepsy where he died from supposed epileptic exhaustion following a series of convulsions. This was undoubtedly a case of hyperinsulinism.

It has not been so long since hyperthyroidism with its nervous manifestations was frequently diagnosed as a neurosis.

HYPERPARATHYROIDISM

That there is a definite clinical syndrome. the direct opposite of parathyroid tetany, has been quite well established by many investigators. Undoubtedly the discovery by Collip(18) of an active parathyroid extract laid the foundation for this clinical entity. Enlargement of the parathyroid glands in certain diseases of the skeleton, such as: rickets, osteomalacia and *ostitis fibrosa cystica* had been noted at necropsy for more than 20 years. Hoffheinz(19) in 1925 reviewed the pathologic reports of 45 cases of enlarged parathyroid glands. In 27 of those cases there was disease of the skeleton; *ostitis fibrosa,* 17; osteomalacia, 8; and rickets, 2. Erdheim(20), more than thirty years ago, noted the frequency of the combination of bone diseases with parathyroid tumors, offering at that time the theory that the parathyroid gland was hypertrophying to offset the disturbed calcium metabolism.

On the basis of this work, Mandl(21) in 1925, removed a parathyroid adenoma from a patient who had a generalized ostitis fibrosa. This patient, aged 38, had been bedridden for several months on account of agonizing pain and had been compelled to use crutches for several years previous. Following this operation, the patient made a spectacular improvement. Up to 1929, a total of nine cases have been recognized with the syndrome which Barr, Bulzer and Dixon(22) of St. Louis called hyperparathyroidism. In five of the nine cases a parathyroid tumor was removed with striking improvement in every case a few days following the operation. One case in which apparently normal, but undoubtedly hyperfunctioning parathyroid glands were removed, there was as marked improvement as in the adenoma removals. Three patients were not operated on.

The clinical features of the syndrome hyperparathyroidism are: (1) Abnormally high serum calcium. (2) Usually a low concentration of serum phosphorus. (3) Abnormal excretion of calcium in the urine with occasional formation of calcium stones. (4) Rarefaction of bone, usually associated with multiple fractures. (5) Occurrence of multiple cysts, tumors, osteomalacia or osseous pathology of unknown nomenclature. (6) Muscular weakness and hypotonia.

The principal complaint in the cases reported, practically always referred to the osseous system. All the patients have had difficulty in locomotion, many of them becoming bedfast. The impared function was usually due to bowing of the bones or spontaneous fractures with pain over the site of the fractures and in various parts of the body, associated with muscular weakness. The tumors removed at operation were fairly large in every instance, approximating the size of an olive. In only one instance, however, was the tumor palpatable previous to operation. A single parathyroid gland was involved in each case, the left lower gland in three out of four.

The values recorded for the serum calcium, range from 13.1 to 20.75 milligrams per 100 c.c. The serum phosphorus usually between 1.4 and 3 milligrams. In all instances in which operations were performed, the preoperative urinary output of calcium was definitely increased above normal.

As a rule, immediately after the operation, the blood calcium falls step-like to a point where tetany develops, sometimes with such severity that repeated injections of parathormone and massive doses of calcium have been required. One of the early patients died from tetany before a better understanding of handling these cases was had. It is weeks before the serum calcium rises to normal limits. Occasionally a severe oligoria develops.

The onset of this new disease is insidious and the course chronic and progressive. The early symptoms are: weakness and pain in the bones associated with increasing debility until as in several of the cases on record, the patients were bedridden for four or five years. The bones soften and skeleton deformities such as scoliosis, wedge-shaped pelvis and loss of statue occur.

General features include: anemia, loss of weight, disturbed sleep, poor appetite and disturbed menstrual function.

To some extent, medical measures such as a diet rich in vitamin D and ultra-violet therapy. improves the condition temporarily. However, in cases of skeleton decalcification or fractures of obscure cause, if associated with hypercalcemia. a surgical exploration of the parathyroid gland should be made. If a tumor is not found, the removal of one or two parathyroid glands is justified from the favorable results so far reported.

To date, in the cases that have been surgicalized, there has been marked relief of pain, reunion of the fracture bones and great improvement in strength and muscle tone. This was especially noticeable in the cases in which a tumor was found.

CASE REPORT. Mrs. C. C., aged 37 years, was first seen in consultation with Dr. John Duncan in October, 1929. Her chief complaints were: severe pains, especially noticeable in the lateral chest wall, and difficulty in walking. About five years previous she first noticed twinges of pain of an inconstant character, in various parts of the body. This distress did not become extremely severe until about two years ago, at which time she noticed marked distress and pain in the lumbar-sacral region, anterior and lateral aspects of the thorax, pelvis, calves, arms and hands. With the advance of time, the pain has increased in severity until it is so severe that at times the patient becomes nauseated and vomits. Sudden movements such as; twisting, turning, arising or sitting produce severe paroxyms of pain. Gradually she had been losing strength in her legs and having increased difficulty in locomotion so that she spent the greater part of her time in a prone position. Most of the time, it was necessary to have assistance in walking. She has lost considerable strength, both in the arms and legs, but only slight loss in weight, normally weighing 110 pounds. Her appetite was good. No gastro-intestinal complaints, mild constipation. She had no history of urinary disturbances in the past or present. The menstrual history was normal except for a lessening amount of flow.

In the past, years previous, the patient suffered from mild rheumatic pains which cleared up with the removal of foci in the mouth and nasal pharynx. No x-rays of the bony parts were made at that time. Past history: otherwise negative. Family history: non-essential, no neurologic stigmata. Personal history: housewife, two healthy children.

Physical examination: adult, female, about 5 feet tall, well nourished, stands fairly erect with support, no abnormal curvatures or bowing, walks with a waddling gait as if in pain or afraid of causing pain. She had difficulty on arising, partially from the pain experienced and the lack of strength. The positive and essential negative findings were: no deformities of the head. Tonsils removed clean. Teeth and gums in good condition, one retained root. Eye examination, negative, no blue sclerotics. Thyroid gland, nonpalpatable. Chest: pain on pressure over sterum and ribs, no definite palpatable enlargements in areas of tenderness. Abdomen and pelvis examination: negative. Skeletal examination: no bending, bowing, enlargement, crepitus, abnormal mobility or findings to indicate abnormal growth. Extreme tenderness over 7th, 8th, 9th, and 10th ribs, right and left. Tenderness over both fibula, central portion. Neurologic examination: essentially negative. Laboratory examination: Blood wasserman, negative. Spinal fluid, no abnormalities. Blood pressure, systolic 122, diastolic 62. Temperature, 98.2-98.8. Pulse 66 to 78. Repeated urinary examination, essentially negative. Bense-Jones protein test, negative on two occasions. Blood examination: Hemoglobin, average 65%. Erythrocytes, average count 3,600,000. Leukocytes, 7,000. Differential count: Poly Neut, 62. Small lymphocytes, 34. Large lymphocytes, 4. Myelocytes, 0. Neucleated reds, 0. Anisocytosis, slight. Poikilocytosis, 0. Polychromasia, 0. Gran. Degen., 0.

Nov. 2, 1929: Blood serum calcium 13 Mg. per 100 c.c. of blood. Phosphorus 4 Mg.

Dec. 16, 1929: Blood serum calcium 12.5 Mg. per 100 c.c. of blood. Phosphorus 3.1 Mg.

Dec. 28, 1929: Blood serum calcium 11.5 Mg.

Jan. 6, 1930: Total intake of calcium 1,358 Gms. and total calcium excreated in urine, 0.350 Gms.

Roentegen examinations were made by Dr. James Kelly of the genito-urinary tract, teeth, entire spine and ribs, upper and lower extremities, skull and pelvis. Cystoscopic and pyelographic examinations were negative.

The positive x-ray findings were as follows: Some generalized loss of calcium but not sufficient to make a diagnosis of osteomalacia as generally accepted. There were fractures through each of the fibula which were straight transverse with fibrous union only. Similar fractures were present through the 7th ribs on the right and left. The 9th rib on the left, the 10th rib on the right and the 11th rib on the right.

At that time we considered a diagnosis of hyperparathyroidism, but could not come to any definite conclusion in that we considered our serum calcium as possibly within the upper level of normal, our serum phosphorus as not distinctly abnormal, our negative history of urinary stone findings, the absence of palpatable adenomas of the parathyroids, and the atypical x-ray findings, as differentiated from those as usually seen in the cases reported. We have since, without success, tried to persuade our patient to reenter the hospital for further study.

While in the hospital and since leaving there, the patient has had ultraviolet light therapy, large dosage of viosterol and a diet with a high vitamin and mineral content. For a time she progressed favorably. The pain lessened and she gained in strength, but for the last year and a half, her course has been progressively slightly worse.

A case very similar to this one was reported by Milkman(23) in July, 1930, under the diagnosis of pseudo-fractures with the consideration of hunger osteopathy, late rickets and osteomalacia as possibilities. He makes no mention in this report pertaining to the blood chemistry as regards calcium and phosphorus or of the urinary calcium balance.

Dr. Duncan removed a section of rib for biopsy which the pathologist reported as anatomically unchanged. The chemistry of the bone removed has not been definitely determined.

We are presenting this case under the tentative diagnosis of hyperparathyroidism because our knowledge of this clinical entity, while fairly definitely established, is of such recent origin that our horizon may be much broader than our present conception of the types of bone pathology that rightfully belong under this endocrine disorder.

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(Discussion in next issue)

THE SELECTION OF OPERATION FOR PEPTIC ULCER*

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The substance of this paper is a short analysis of the principles of the various operations for peptic ulcer. I will merely attempt to present the principles of the radical operation for peptic ulcer, as they may be applied to a more conservative type of operation. My work in the clinic of Prof. von Haberer, where gastric resection is almost the routine operation for peptic ulcer, offered me the rare opportunity of studying the various phases of this operation.

The operation of choice in the von Haberer clinic is a modified Billroth I and the operation is performed in the following manner: A segment of the acid stimulating portion of the stomach, the pylorus and the ulcer bearing area of duodenum are removed. The entire end of the stomach is then anastomosed to the end of the duodenum in such a manner that the stomach "mushrooms" over the duodenum. This end to end anastomosis permits the contents of the stomach to enter the duodenum whose mucous membrane and alkaline fluids are adapted to the acid secretions of the stomach. This operation also permits the direct regurgitation of alkaline duodenal contents into the stomach. Summarizing, this operation exclusive of removing a segment of the acid stimulating portion of the stomach entails certain principles:

1. Removal of all existing ulcers.
2. Removal of the pylorus whose spasticity probably plays some role in peptic ulcer.
3. Permission of direct neutralization of acid stomach contents in the duodenum and regurgitation of alkaline duodenal contents.

Prof. von Haberer repeatedly remarked that this type of Billroth I operation would result in practically 100% cures, provided all the ulcers could be removed. If the duodenal ulcers could not be removed, the percentage of cures would not be so high and in such cases he usually did an anterior Billroth II with an entero-enterostomy. In spite of the wonderful end results of Prof. von Haberer's modification of the Billroth I, there remains the disadvantage of a slightly higher mortality rate as compared with gastroenterostomy.

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*Read before annual meeting Nebraska State Medical Association, Omaha, May 12-14, 1931.

With the above principles of the Billroth I in mind, exclusive of removal of a segment of the acid stimulating portion of the stomach and a knowledge of the good results following this operation, I believe these principles as far as possible should be followed in performing the less radical types of operation.

I believe it is the consensus of opinion that all gastric ulcers should be excised or removed by means of the electric cautery and a posterior gastroenterostomy made. This operation gives about 90% good results. Gastroenterostomy alone gives about 50% good results. With gastroenterostomy plus removal of the ulcer, two of the three principles outlined above are carried out, except that the neutralization and regurgitation phenomena is not direct with the first part of the duodenum. The only principle completely omitted has been removal in part or whole of the pylorus. If the ulcer is larger than 2.5 cm. in diameter, gastric resection must be seriously considered because of the potential danger of malignant degeneration. Ulcers high on the lesser curvature are difficult to remove and do not respond so well to gastroenterostomy. Probably feeding through an enterostomy tube is advisable here on rare occasions.

A duodenal ulcer with pyloric obstruction responds excellently to gastroenterostomy and the results are almost all that may be desired. A duodenal ulcer with high acidity and rapid emptying does not respond well to gastroenterostomy and a gastrojejunal ulcer is a potential complication. Wilkie, among others, advises gastroduodenostomy in such cases and performs the operation in such a manner as to occlude the pylorus thereby putting the first part of the duodenum at rest. This operation permits the stomach to empty directly into the duodenum and permits regurgitation of alkaline duodenal contents. It does put the ulcerated area to rest but fails to remove the ulcers. The pylorus is not partly or wholly removed, but it does not come into function. It can be seen that this operation does not completely fulfill the postulates given in the first part of this paper, but it does give good clinical results in this particular type of duodenal ulcer. This operation can only be done when it is possible to mobilize the duodenum. The modified Mikulicz or Horsely operation as recommended by Judd does fulfill all the principles laid down earlier in this article and probably will prove to be the most suitable operation for duodenal ulcers, except cases of a too fixed duodenum. Here the anterior half of the pylorus is removed with all the ulcers on the anterior wall. The ulcers on the posterior wall may then be destroyed with the electric cautery and the defect in the mucosa sutured. Closure of the wound transversely permits the phenomena of direct neutralization and regurgitation to take place. When this latter operation cannot be performed in the average case of duodenal ulcer gastroenterostomy with removal of the ulcer by excision, cauterization or infolding is the operation of choice. Luff shows by his collected report on the results of the various operations for duodenal ulcer by 86 British surgeons, that in only 64% of the cases was the result satisfactory with gastroenterostomy alone but that 81% of the cases with gastroenterostomy plus excision, cauterization or infolding of the ulcer gave satisfactory results.

Summarizing the question of gastric resection, I believe it should be in the armamentarium of every surgeon, but should be reserved for large gastric ulcers, hour glass stomach, and various types of recurrent ulcers.

DISCUSSION

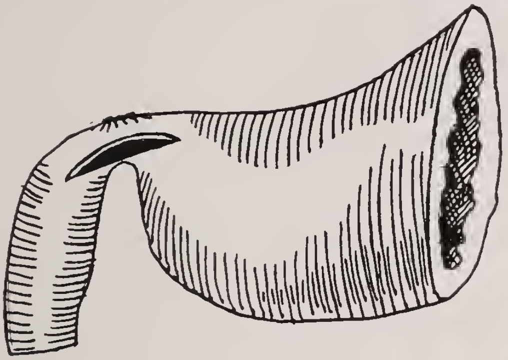
ALFRED J. BROWN, M. D., (Omaha): Dr. Best is to be congratulated on one thing, particularly. That is, after having been in a clinic for a year where resection of the pylorus or gastrectomy are the routine procedures, he has returned with an acquired immunity, and recommends less drastic, less difficult, and less dangerous procedures.

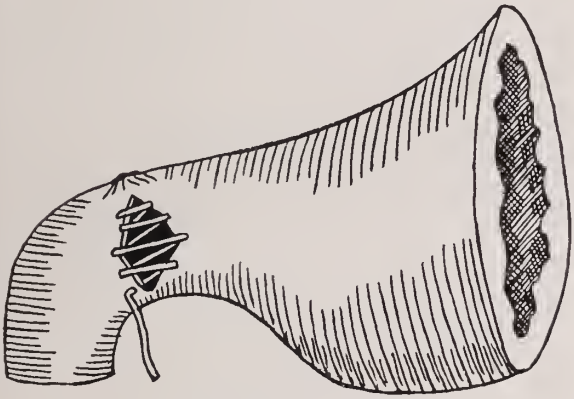
Dr. Best pointed out that the main ideas surgeons have been working on for years in the operative treatment of peptic ulcer are first diminution of the acidity of the stomach, removal of the ulcer, and removal of a spastic pylorus. It is interesting to see how an operation of this kind develops and I would like to call attention to one other operation I think is valuable in this condition and trace its development.

In 1886 and 1887, Dr. Heineke and Dr. Miculicz, working separately, though at the same time, came to the conclusion the proper thing to do in peptic ulcer was to enlarge the pyloric ring. They had an idea the trouble was caused by contraction of this ring. Consequently, they made an incision through the wall of the stomach anteriorly, cutting across the pyloric sphincter, putting in a pair of hooks, enlarging the pyloric ring by suturing at right angles to the original incision but leaving the ulcer alone. They found that by doing this regurgitation backward of the alkeline content into the stomach was brought about and spastic contraction of the pyloric ring ceased. This operation was used for congenital hypertrophic pyloric stenosis in infants, and its failure resulted in the modern operation.

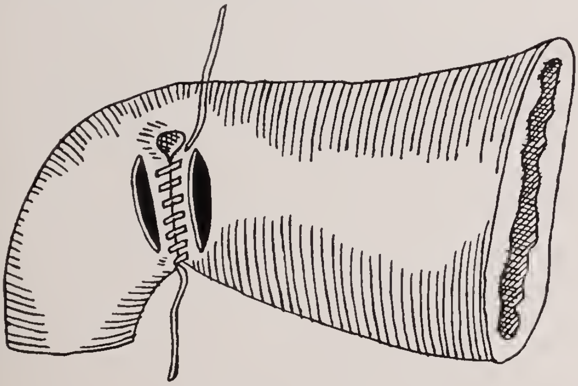
The next step was by Dr. Jaboulay, who, in the latter part of the century, decided to leave the ulcer and the pylorus alone, doing a gastroduodenostomy, as Mr. Wilke does at the present time. This was based on the facts that it is difficult to find an ulcer on the posterior wall of the duodenum and if the ulcer is excised at the same time, it causes trouble technically.

Finally Dr. J. M. T. Finney, of Baltimore, advised an operation in which he combined the first procedure, excision of the ulcer, with the gastroenterostomy. The operation of Finney brings together the anterior wall of the stomach and the anterior wall of the duodenum, with a long line of suture and a horseshoe incision, along the stomach and the duodenum, which passes through the pyloric ring and divides the pyloric muscle is made. The ulcer can then be excised, if on the anterior surface. If the ulcer is on the posterior surface of the duodenum, it is necessary to pull the lips of the wound apart and cauterize, without going through to the peritoneum as excision is rather difficult. The results accomplished by Dr. Finney's operative procedure in the treatment of peptic ulcer are (1) to excise the ulcer; (2) take away the spasm; and (3) allow regurgitation of the alkaline contents of the duodenum; but it does not remove the acid-bearing glands of the stomach.



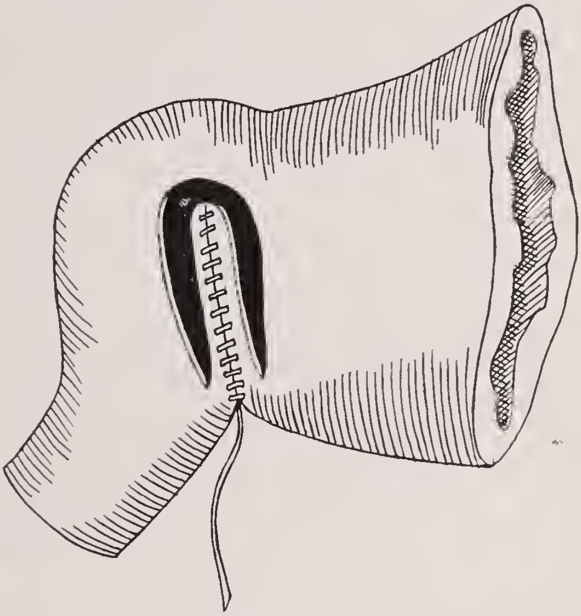


Heineke-Mikulicz Pyloroplasty



Jaboulay's Gastroduodenostomy

The results as recorded by Dr. Finney are sufficient to indicate the use of this operation. One of the others such as Dr. Best has described may also be used rather than complete resection or partial gastrectomy in simple ulcers. The cases in which Finney's operation is particularly beneficial belong to the type in which the ulcer has not caused a good deal of surrounding inflammatory mass and adhesions, and this operation, which at best is rather difficult technically, may be done.



Finney's Pyloroplasty

In such cases, in my personal experience, the operation gives excellent results.

HERBERT H. DAVIS, M. D., (Omaha): The reason for these surgical discussions, to a great extent, is due to a peculiarity of human nature which makes it difficult for people to diet when feeling fairly well. If people having symptoms of ulcer would go to a medical man early and follow out his treatment carefully, we would hardly ever need to discuss surgical treatment. After a short time of medical treatment, the symptoms are relieved, and the people think they are all right. They break over the diet, and that is why they recur. Dr. Moynihan has shown it may take two years for a chronic ulcer to heal under good management.

For the medical man, differentiation between gastric and duodenal ulcer is not so important, because the medical treatment is the same. For the surgeon, it is tremendously important. In Europe, where you see so many gastric resections, a good share of the leading men do not need to individualize so much, because gastric resection for gastric or duodenal ulcer works out well. As an ulcer is a nonfatal thing as a rule, to carry out on all ulcers an operation which carries such a high mortality as gastric resection seems to be unjustifiable.

One trouble with nearly all surgical statistics on results of operation is the results are given for all gastroenterostomies irrespective of the indication for that operation. Certain types of cases give excellent results with this. A chronic duodenal ulcer with obstruction, especially in elderly people, gives excellent results. Dr. Best spoke of cases of duodenal ulcer with high acidity and that empty rapidly. Personally, I think a gastroenterostomy will make many of these worse. If you do some other type of operation such as he has suggested, I think you will get good results. One difficulty with pyloroplasty is that the one type they are good for is the early lesion. A good many of these should be left alone surgically.

With gastric ulcer, gastroenterostomy alone, or resection do not work out well. I have observed a couple of cases following simple resection without gastroenterostomy, and both had 85 to 90 per cent residue in the stomach at the end of twenty-four hours. I personally believe it is a bad operation. A gastric resection in an ulcer which will not heal is good. A gastric ulcer heals better with medical treatment than a duodenal ulcer does. The duodenal ulcer is easier to handle surgically than the gastric.

CLYDE ROEDER, M. D., (Omaha): The surgical procedure of gastric lesions will vary with the development of the surgeon and his early and favorable impressions. When any of us begin the study of any subject, we naturally obtain impressions of the advantages of certain operations, particularly if an impassive instructor claims a certain degree of success for any one surgical maneuver. That is the reason most operators today in this country and England prefer a gastro-jejunostomy for non-resectable duodenal and gastro chomic infiltrating peptic ulcers. There have been many operations offered for treatment of peptic ulcer, and there always shall be owing to very unstable chemical and physical reasons.

An ulcer of the duodenum and of the stomach are quite two different pathological conditions, from a surgical standpoint, but practically the same thing from a medical standpoint. We do not know why ulcers are quiescent in summer and winter, and become active in spring and fall; it may be ulceritis.

I feel that once you have peptic ulcer, you never get rid of it unless you cut it out, and then you must substitute one abnormality for another. The stomach is a large organ, and the jejunum is quite long, and if you can mobilize your segments, you can apply almost any form of anastomosis and obtain a successful result, provided drainage becomes normal.

Gastric chemistry before and after operations is important. Why do people have secondary ulcers? Is it racial peculiarity, acidity or bacterial invasion? The main thing against a proper gastroenterostomy is a secondary ulcer. It should be remembered that many patients do not stand any type of surgery, and that it takes years of experience to even approach the results of the few great masters of surgery we have in this country and abroad. Every experienced surgeon knows that every case is different and requires differences in procedure. There is, therefore, no one perfect operation for any lesion, let alone chromic peptic ulceration.

THE IMPORTANCE OF PRIMARY TREATMENT IN FRACTURES*

H. WINNETT ORR, M. D.,
Lincoln, Nebr.

The impression among physicians and surgeons generally is that their results in the treatment of fractures are very good. In a sense this is true. No physician or surgeon has any considerable number of bad results following fractures. A study of fracture results among those who have the primary treatment of these conditions shows that not more than one or two patients out of every twenty-five have what might be called a poor result, so that if a fracture receives what may be called average treatment the patient has a seventy-five or eighty per cent chance of getting a good result.

When we look at the fracture situation as a whole, however, and find that out of five thousand fractures in Nebraska in any given year, two hundred and fifty to three hundred may expect to get definitely bad results following fractures, it will be seen that the amount of crippling and disability from this cause is considerable. These are the patients who suffer handicaps for themselves and for their families, who make large expense for the insurance companies and hospitals, and who make damage suits for the doctors.

Out of a considerable personal experience with this class of patients I shall take the liberty of making one or two suggestions as to how some of these difficulties may be avoided. The patient who comes to the specialist with a bad result after a fracture is a dissatisfied patient. His doctor may, and usually does, have an excuse and sometimes a very good excuse, for the poor result. The patient, however, commonly has the complaint that the fracture was never properly set in the first place and occasionally he is right. In too many instances nowadays the doctor has not even an x-ray to prove the correctness of his views in regard to the primary treatment of the particular case. Certainly loss of position sometimes occurs after correct primary treatment of the fracture. This may or may not, be due to poor splinting. Sometimes with an end to end apposition there is rotation of the fragment, which gives deformity and disability. Much less commonly there is bad position or even non-union which may be due to a variety of causes.

Out of the clinical, and I may say, literary, confusion during and following the Great War I think we may say that we have arrived at the opinion that perfect anatomical re-position of fracture fragments and immobilization of neighboring joints until primary healing of the fracture has occurred, are essential in fracture treatment. There have been many suggestions to conflict with the teaching but the best opinion at the present time will support these two fundamental propositions. One difficulty which remains is that there is a considerable number of surgeons who feel that early mobilization of joints in the neighborhood of fractures is necessary. They base this view on the fact that stiffness commonly ensues upon the treatment of these conditions. It is this phase of the subject which I wish to discuss particularly.

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*Read before annual meeting, Nebraska State Medical Association, Omaha, May 12-14, 1931.

Let us take for example, fractures of the radius and ulna at the wrist. Nearly every modern text book emphasizes the importance of early motion of the hand and fingers to prevent stiffness following these fractures. Disability of the hand and wrist following such fractures is one of the conditions that presents itself to me most frequently for treatment. These patients come, as a rule, six, eight and ten weeks following the fracture. The wrist and hand are stiff, the hand cannot be closed, the wrist cannot be dorsiflexed, and the disability is blamed upon prolonged splinting or a flat splint following the injury. It is my observation that these hands, wrists, and fingers are stiff as a rule not because of splinting, but because of poor primary treatment.

When such accidents occur the common deformity is radial and backward displacement of the lower end of the radius. This is seldom fully overcome at the time of primary treatment. The shaft of the radius is impacted into the head at the lower end and the wrist and hand are allowed to remain completely or partially in this position. In fact, the advice that is sometimes given regarding impacted fractures of the hip, namely, to let them alone, is too often carried out at the wrist and an impacted lower end of the radius is not broken up because the deformity is not very great and it is deemed best not to disturb a position which seems fairly good and is secure at the time of injury. I think I may say that this is always a mistake; the lower end of the radius which is impacted and displaced backward should always be brought down into correct position so that the hand can be swung over to the ulnar side and the hand dorsiflexed and splinted in that position. Sometimes a short period of preliminary splinting with the hand palmar-flexed is necessary until primary healing of the fractured radius has taken place. This need not be more than a week or ten days in any case.

If such treatment is carried out carefully, no matter what the age of the patient, stiffness of the hand and fingers will be reduced to a minimum, or will not occur at all. That stiffness in such cases is not due to the splinting even on a flat, straight splint, which is not a correct splint, I think I may prove to you by saying that when these patients do come late, eight, ten or twelve weeks after injury, with hands and wrists that are perfectly stiff, if at that time the displacement at the lower end of the radius is corrected, and if the hand is brought into correct position toward the ulnar side and dorsiflexed, even after a prolongation of the splinting period, it is found that the hand and fingers limber up and within a few weeks we have a fairly freely movable wrist, hand and fingers. This is true even after a total period of three or four months of splinting; the return of function having come with the hand and arm still in cast but in correct position and after a first long period of great stiffness.

The same observations may be made with reference to fractures of the leg, especially those near the ankle. We see many of these patients in which drop foot with pronation and a great amount of stiffness has occurred during the period of treatment immediately following the fracture. In many such cases the fracture fragments seem to be in fair position but with a moderate amount of spreading at the ankle and backward displacement yet the patient may present himself at the end of six, eight or twelve weeks with a perfectly stiff and entirely useless foot in the pronated and drop foot position. Moreover, this may be true whether the splinting has been good or bad.

By forcible manipulation of such a patient under anaesthetic, the foot is brought up to a right angle and slightly inverted. Then the foot is put in a plaster of Paris cast for a month or six weeks longer. Upon removal of the cast the foot, ankle, and even the tarsus which seemed quite stiff at the time of manipulation and in spite of the additional time in the plaster cast, are found to have become quite freely movable. This is due quite obviously to the improvement in position and the fact that the fragments of the fracture and the other structures in the vicinity have been replaced in correct anatomical relationship.

These cases make a very striking illustration of the fact that stiffness is the result not of immobilization at all, but immobilization in bad position, and that upon the correction of the position of all the parts involved in injury, the return of function takes place rapidly and correctly and in spite of a longer period in cast or splint.

The conclusion, therefore, is that the object of primary treatment must be to carry out at that time a procedure which will insure correct anatomical reposition of all the parts involved in the injury. That is to say, not only the fracture fragments but all of the other anatomical structures related thereto. A recent prominent writer on the treatment of fractures states that he has practically discontinued the use of traction in the treatment of fractures. By that, I feel that he must mean secondary traction. The use of such traction as is necessary at the time of the primary operation to secure correct length and position of the fracture fragments is absolutely essential. This traction and the manipulations necessary to restore fracture fragments to correct position may be discontinued following the primary operation only upon the condition that the position is accurately and adequately maintained by the splint or apparatus applied at the time. This must be as extensive and as complete as necessary. Ice tongs, pins, or even open operation must be resorted to if fracture fragments cannot be perfectly reduced and controlled otherwise, and this entire procedure should be carried out at the time of the primary treatment.

To carry on the secondary treatment of a fracture with the knowledge that anything less than perfect position has been obtained is to invite trouble for the patient and for everyone connected with the patient. In my own opinion ice tongs, pins, adhesive and plaster of Paris casts represent the essentials of treatment. In this way correct position can be obtained on the operating table, and fixed traction and immobilization may be applied at the time so that no secondary changes in position are required. This is the ideal method and the only one which will uniformly give satisfactory results in these cases.

DISCUSSION

ROB'T. D. SCHROCK, M. D., (Omaha): I should like to bring out one point a little more in detail—that the fixation must be in anatomic position in order to accomplish the purpose for which it is applied—that purpose being rest. In addition to anatomic fixation, it must be comfortable. Even though the position be correct, unless it is adequately padded and free from points of pressure which give rise to discomfort, the purpose is defeated. It must be so that the patient will have rest for the organism as a whole. Owing to local points of compression, there is a local stasis distal to the point. There is an exudate which will give rise to adhesions in the joints. If the position is anatomical and the person is comfortable, the result as described by Dr. Orr will be obtained.

May I put a little more stress on the relative shortening of the radius and ulna at the wrist joint? The shortening is of no great significance if it be less than one-half inch. However, one-fourth inch deviation at the wrist will give rise to radial deviation which will result in fixation. The relative rate between radius and ulna at the wrist can not be stressed too sharply.

DR. ORR, (closing): I appreciate this word that Dr. Schrock has brought us. While we have been greatly concerned about the relationship of the bones, we think too little about the relationship of the nerves, vessels, etc. Many of our difficulties arise because we fail to get correct position of all of our anatomical structures in treating these conditions.

AVERTIN ANAESTHESIA

An analysis of fifty consecutive cases of basal anaesthesia induced by Avertin fluid.
(Tribrom-ethyl-alcohol in amylene hydrate).

ROY H. WHITHAM, M. D., and I. C. MUNGER, JR., M. D.,
Lincoln, Nebr.

The introduction of several new anaesthetic agents in the last few years is indicative of certain dissatisfaction with the older agents as well as of the extension of chemical and pharmacological research into this field. With the exception of ethylene all of the more recently popularized anaesthetics are given by some route other than inhalation. Spinal and other regional anaesthesia by procaine injection is enjoying great popularity. Barbituric acid derivatives are being advocated as basal anaesthetics, and are given orally or intravenously. Tribrom-ethyl-alcohol, a close chemical relative of ethyl alcohol, ether, chloroform and ethylene was introduced in Europe over seven years ago and has been widely used on the continent. It has been used in this country only in the last two years and has enjoyed no great popularity.

This report is based on a study of fifty consecutive cases of Avertin fluid anaesthesia given at the Lincoln General Hospital (34) and the Bryan Memorial Hospital (16) between October 7, 1930 and February 2, 1931. This anaesthesia was given under our personal supervision, in an attempt to produce only a basal anaesthesia which could be supplemented by some other anaesthetic agent.

METHOD OF ADMINISTRATION

Avertin fluid (tribrom ethyl alcohol dissolved in amylene hydrate to permit simpler measurement) was used in all of our cases. An attempt was made to regulate the dose so that a basal anaesthesia only would be produced. From 60 to 100 mg. per kilo were given, the larger doses being given to children and strong vigorous young people, the smaller to weaker individuals. The frequency of the various doses in mg. per kilo was as follows:

	Cases
100	18
90	16
85	2
80	9
70	2
60	1
Not recorded	2
	50

The exact dose was determined and measured with a pipette and diluted with water to make a 2.5 per cent solution. This is easily accomplished by reference to a dosage table which is supplied with the drug. Hot water was used and cooled to about 100 degrees F. before adding the drug. Cool water dissolves the drug slowly and solutions heated to over 113 degrees F. decompose to form hydrobromic acid and dibromacetaldehyde, the latter a toxic irritant to the intestinal mucosa. Immediately before administration the solution was tested for decomposition by adding a few drops of Congo-red 1:1000 to 5 c.c. of the solution in a test tube. Any resulting bluish or violet tint indicates decomposition. The full dose was then injected into the rectum by means of a catheter and a funnel.

ACTION

Within five minutes after injection of the drug the patient usually goes into a profound sleep, from which he cannot be aroused. Muscular action ceases and the pulse, respirations and color are almost unaltered. There may be some depression of the blood pressure. There is never any preliminary excitement and the patient has no recollection of the induction. Waking occurs in the same uneventful manner, in this series in an average time of 3 hours 43 minutes. The shortest duration was 1 hour 10 minutes, the longest 7 hours 5 minutes. It is said that 80 per cent of the drug is absorbed in the first twenty minutes, and 95 per cent in two hours. Excretion is accomplished by the kidneys after detoxication in the liver by a combination with glycuronic acid.

PREPARATION OF PATIENT

As a rule a cleansing enema was given the night before operation; never the morning of the operation. In emergency cases, no enema was given. Irritating cathartics were avoided. In some cases a hypnotic was given the night before operation. The sedatives used immediately before the avertin were as follows:

	Cases
Morphine	36
Morphine and hyoscine	4
Barbituric acid derivatives	3
None	6
Not recorded	1
	50

We are now inclined to feel that the use of any sedative is superfluous and that morphine particularly only adds to the somatic depression.

TYPES OF CASES

Twenty-three of the patients were females, twenty-seven were males. The youngest was two years of age. the oldest eighty-five. The age distribution is shown in the accompanying table:

Decade:	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
No. Patients	3	3	12	11	6	8	4	2	1

These patients were attended by thirteen surgeons. The operations performed were major in forty-three cases, minor in seven. They may be classified as follows:

Major orthopedic cases	15
Laporotomies	19
Minor, miscellaneous	4
Thyroidectomies	3
Decompression of skull	1
Ligation esophogeal diverticulum	1
Radical breast	3
Cystoscopies	2
Laryngoscopy	1
Perineal repair	1

DEATHS

Three deaths occurred in this group before discharge from the hospital, none of which could be attributed to the anaesthetic. The case on which decompression was done died a few hours after operation with the symptoms of brain injury. One thyroidectomy case died three days after operation in a thyroid crisis and one of the orthopedic cases died of pneumonia a few days after the operation.

The supplemental anaesthesia used was as follows:

Nitrous oxide	24
Ethylene	3
Local	2
Ether	1
None	19
Not recorded	1
	50

There was very little relation between the dose given and the need for supplemental anaesthesia in this group, probably because the stronger individuals were given larger doses, the aim of producing a basal anaesthesia being the same in every case. Neither did the use of pre-operative sedatives or the type of operation alter these relations.

The relaxation produced was much better in these cases than when gas anaesthesia is given without avertin, the combination comparing favorably with ether anaesthesia in this regard. Also it was evident that the proportion of oxygen given could be kept much higher than with the usual gas anaesthesia, many of the patients receiving an equal amount of anaesthetic agent and oxygen. The color under these conditions was very good.

EFFECT ON BLOOD PRESSURE

One of the most common observations in these cases was a fall in blood pressure. An attempt was made in this series to record the blood pressure every ten minutes from the time the anaesthesia was given until the operation was completed. Observations on the blood pressure are not made routinely during anaesthesia in this community and the fall proved rather distressing to the surgeons. We have noted repeatedly a fall of 20 to 30 mm. mercury systolic in cases under ethylene anaesthesia, and it is very likely that such depressions occur more commonly than we suppose. In a few cases the fall in blood pressure was so great as to produce a distinct change in the character of the pulse and in the color of the skin and mucous membranes. In one case the pulse became imperceptible and the blood pressure could not be obtained for a period of two hours. We feel that there is little doubt that this depression is due to the avertin fluid since it begins so promptly after the drug is given. In every case in which ephedrine was given a prompt return to normal levels was noted.

The frequency and extent of this blood pressure depression can be seen in the accompanying tables which are records of the extreme fall from the pre-anaesthetic level. The average fall of 32 mm. mercury systolic and 10 mm. mercury diastolic in half of the cases is greater than that reported by other writers on the subject.

NUMBER OF PATIENTS SHOWING FALL IN BLOOD PRESSURE

DOSE mg. per kilo	NONE	MODERATE (less than 20 mm. systalic)	MARKED (over 20 mm. systolic)
100	2	3	12
90	1	2	7
85 or less	4	2	6
	—	—	—
	7	7	25

DOSE	LEAST		GREATEST		AVERAGE	
Mg. per kilo	Syst.	Diast.	Syst.	Diast.	Syst.	Diast.
100	20	2	56	20	36	8
90	30	28	56	20	26	13
80 or below	24	10	50	20	34	9
AVERAGE					32	10

PULSE, RESPIRATIONS AND COLOR

The pulse and respiratory rate was recorded every ten minutes. Nothing significant was noted in either, the pulse rate often falling somewhat after the patient became unconscious. A distinct decrease in the depth of the respirations were noted in those cases showing more profound effects from the drug. Carbon dioxide was given in a few cases with a resulting increase in the depth of respiration.

The color was ordinarily pink, but in cases showing severe blood pressure reaction a gray pallor was noted. Cyanosis did not occur.

MISCELLANEOUS EFFECTS

In five cases a generalized tremor of no significance was noted. Six of the cases developed some hiccough, one severe but controllable by carbon dioxide. Two cases had nausea without vomiting and only nine had nausea and vomiting when awakening. Of the nineteen laporotomies, only three vomited, a record which could hardly be paralleled by any other anaesthetic. Rectal irritation was recorded in five cases, but none consisted in more than a few mucous stools. Excitement occurred only once and that in a child.

The opinion of the patient concerning the anaesthetic was recorded in ten cases. Nine were enthusiastic about it and one who had had both ether and ethylene previously had no choice between the anaesthetics.

COMMENT

The surgeons using avertin were at first enthusiastic about it, but when vasomotor depressions began to manifest themselves, they were viewed with some alarm although they did not prove fatal in any case. At about this time (11-8-30) a warning of caution was published by the Council on Pharmacy and Chemistry of the American Medical Association and the use of the agent was largely discontinued. At the present time it is being used but rarely, and there is no indication that it will be used more commonly, although it is still available in the hospitals. We do not feel that our experience justifies the complete discontinuance of avertin, but our experience indicates that it should at least be used with great care and discrimination. In cases with disease of the respiratory tract contraindicating inhalation anaesthesia, it may prove to be the anaesthetic of choice, especially when the region to be attacked cannot be anaesthetized by spinal anaesthesia.

SUMMARY

1. Avertin was used in fifty unselected surgical cases as a basal anaesthetic.

2. The anaesthesia obtained was satisfactory and no fatalities occurred.

3. Vasomotor depression occurred commonly, twenty-five or one-half the cases showing an average fall in systolic blood pressure of 32 mm. mercury.

4. The use of avertin has been largely discontinued in this community.

5. Disease of the respiratory tract may prove to be a positive indication for its use.

THE TREATMENT OF PNEUMONIA*

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A variety of diseases are caused by the pneumococcus, among which are lobar and lobular pneumonia, these being the two most important. Various inflammatory affections of the lungs may be caused by other organisms, but the pneumococcus plays the important role in the common lobar pneumonia and in the ordinary bronchopneumonia. It may also set up many local affections and is the cause of many terminal infections in chronic diseases.

The disease was known to Hippocrates and the old Greek physicians, by whom it was confounded with pleurisy. Among the ancients, Aretaeus gave a remarkable description(1); "Rudy in countenance, but especially the cheeks; the white of the eyes very bright and fatty; the point of the nose flat; the veins of the temple and neck distended; loss of appetite; pulse at first, large, empty and very frequent, as if forcibly accelerated; heat indeed, externally, feeble, and more humid than natural, but, internally, dry and very hot, by means of which the breath is hot; there is thirst, dryness of the tongue, desire for cold air, aberration of mind, cough mostly dry, but if anything is brought up it is a frothy phlegm, or slightly tinged with bile, or with a very florid tinge of blood. The blood-stained is of all others the worst." Our modern knowledge dates from Laennec 1819 whose masterly description of the disease, the physical findings, the morbid anatomy left very little for subsequent observers to add or modify.

One of the most widespread of all acute diseases, pneumonia has become the "Captain Of The Men Of Death", to use the phrase applied by John Bunyan to consumption. In England and Wales in 1916 there were 37,916 deaths from this cause. In the United States in the registration area in 1917 there were 112,821 deaths, a rate of 149.9 per 100,000; of these, 65,438 were due to lobar pneumonia, 37,947 to broncho-pneumonia and 9,436 were unclassified. It is a disease of cities, in the overcrowded districts of which there has been an increase of late particularly in America(1).

The mortality varies greatly. R. P. Howard treated 170 cases with only 6% of deaths. Russell reported 134 cases with a mortality of 17.9%. The mortality in children is sometimes ver ylow. Morrill reported six deaths in 123 cases of frank pneumonia. On the other hand, Goodhart had 25 deaths in 120 cases(1).

As Sturges remarks, the old are likely to die, the young to recover. Under one year it is more fatal than between two and five. Of fifty cases under ten years of age, 4 died; of 119 cases under 20, 16 died. Above 60 the death rate is very high, amounting to 60 to 80%. From reports of its fatality in some places, one may say that to die of pneumonia is almost the natural end of old people. Death is rarely due to interference with the function of respiration, even in double pneumonia. Sometimes it seems to be caused by the extensive involvement with edema of the other parts of the lungs, an engorgement with progressive weakness of the right heart. But death is most frequently due to the action of the toxin on the circulation, with progressive lowering of the blood pressure.

Lobar pneumonia is caused in about 90% of the cases by the *Diplococcus Pneumoniae*. Researches at the Rockefeller Institute have shown that there are four types of this organism. During ordinary times about one third of all cases are caused by Type I, the other cases being scattered rather irregularly among types 2, 3, and 4. The old belief has been that pneumonia is autoinfectious; that is, that when resistance becomes lowered the organisms always harbored in the mouth are able to establish themselves on a pathogenic basis in the lungs. Recent studies, however, have shown that the type of organism present in the mouth of most individuals is not the one responsible for most cases of the disease; present knowledge therefore inclines toward the position that the disease is contracted by actual droplet infection from an active case or from a recovered case still harboring the causative organism, or from an individual who has become a temporary carrier following such contact, and that the number of chronic carriers is small. The point is not definitely decided. Recent catarrhal fever, exposure to wet and cold, and excessive fatigue are frequent precursors of the diseases(2).

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Lobar pneumonia is characterized by the suddenness of its onset, typically by a chill, stabbing pain in the side, high rise of temperature and pulse rate, rapid respiration often with dyspnea, cough and rusty sputum, and involvement of the nervous system, ranging from mere anxiety to active delirium.

Herpes simplex, jaundice, and initial vomiting are usually seen. Cyanosis, varying in degree with the respiratory and circulatory involvement, always making its appearance later. In the average case the symptoms last from five to ten days with very little remission, and then the attack terminates by a gradual lessening in severity of all symptoms, or, in perhaps not more than 20% of cases, by a crisis in which the change occurs within twenty-four hours.

In broncho-pneumonia there is a diffuse lobular inflammation of the lungs in which several organisms can be identified as the causative factor. There are three types:

(1) The primary broncho-pneumonia occuring in children under four years of age. This type is not directly associated with any other disease, is usually mild, and is nearly always caused by the pneumococcus; the symptoms are much like those of lobar pneumonia except for the difference in the distribution of the pulmonary lesions.

(2) Secondary broncho-pneumonia is caused by *Staphylococcus, Streptococcus, Pfeiffer's Bacillus,* and only rarely by the *Pneumococcus.* It is the most dreaded complication of the infectious diseases in children and of the infectious and chronic debilitating diseases of middle and old age. The occurrence of this complication is usually marked by a change in the severity, and finally the type, of the symptoms which the patient is manifesting, until ultimately the picture of broncho-pneumonia, with its diffuse chest involvement, cyanosis, respiratory and circulatory embarassment, and general toxemia, completely supercede or overshadow the symptoms of the original condition.

(3) Primary epidemic broncho-pneumonia. This type is caused by the *Streptococcus Hemolyticus,* and is seen when this organism acquires an unusual virulence. The mortality is very great in these cases as witness the epidemic during the late World War. Most of the influenzal pneumonias of that period were caused by the *Streptococcus Hemolyticus,* with or without the accompaniment of other organisms whose virulence had been temporarily raised to a high pitch.

The importance in the therapy of acute infectious diseases of accurate observations of temperature, pulse and respiration is so essential that this subject must properly be included under the head of treatment. Only too often a few random observations jotted down from time to time are the only records available. It is quite impossible to follow intelligently the course of a febrile reaction without a careful graphic chart, which shows at a glance the character of the temperature curve, the trend of the fever, the pulse rate and its relation to the thermal reaction, and the respiratory rate. In pneumonia especially, complications such as empyema and sepsis are often first suspected by the form of the fever curve or by alterations in the heart rate which would not be significantly manifest without a graphic chart. The temperature should be recorded at least at four hour intervals. The pulse and respiratory rate should be recorded at the same time as the temperature and in hospitals other useful data may be conveniently placed on the chart(3).

Physicians have always been impressed by the importance of rest in the handling of infectious diseases. Few stop however, to consider the rationale of rest in particular cases. In typhoid fever for example, the patient has to face weeks of wearing infection; hence it is easy to see that his strength must be preserved in every way. In pulmonary tuberculosis we have an additional indication in the relative immobilization of the lung which is affected by absolute rest. There is no disease, however, in which total physical relaxation is more entirely essential than in pneumonia whether lobar or bronchial. It may be set down as an axiom that the pneumonia patients who are up and about, or who are moved and disturbed do badly. Hospital statistics show beyond a doubt that the outcome varies almost directly with the day of the disease on which the patient takes to bed. This was clearly brought out during the recent pandemic of influenza. In certain civil groups where early hospitalization before the onset of pneumonia was practiced the mortality was relatively low, whereas in some of the army camps where the men carried on until they dropped, a mortality of 45% was obtained. The observation may be made daily at the bedside the even turning an ill pneumonia patient may send the respiratory rate up to 60 to 80 per minute with considerable subjective discomfort. Patients have been seen who walked into the hospital in fairly good condition, collapse and die as they were being put into bed. One may say therefore, without any reservation or exception that the most fundamental point in the treatment of pneumonia is to get the patient immediately to bed(4).

Once at rest the usual sick room precautions should be observed. The bed should be preferably single and should have a firm mattress which will not assume the form of a hammock under the patient's weight. Whatever position is most comfortable should be encouraged. If the patient breathes better sitting up he should be supported by some form of backrest or by pillows suitably grouped. Restless or delirious cases must be safeguarded from injury by supports at the bedside or if necessary by some form of restraining sheet, although the latter is undesirable.

The patient should be disturbed as little as possible. Only the essential nursing procedures and examinations by the physician should be carried out. Under no conditions should he be allowed to get out of bed. The bed pan and urinal must be used. Pneumonia patients should not be allowed to feed themselves nor to make a single movement which can be done for them by attendants.

If in any way possible the patient should be under the care of a trained nurse. His comfort and perhaps his life depend upon the details of care. The daily bath must be given with skill and dispatch, the mouth and lips must be kept clean and fresh. The strain of coughing and expectoration is eased by competent assistance and water should be offered before the patient has to ask for it. In brief, the care of an intelligent and competent nurse is essential if the best results are to be obtained. The physician can for the most part do little apart from keeping up a vigilant watch for complications.

The older physicians were keen to realize that patients with lobar pneumonia did better with plenty of fresh air. Often this idea was carried to extremes, the sick one being placed out-doors perhaps in cold or inclement weather. With broncho-pneumonia, however, care and conservatism must be exercised in regulating the temperature and ventilation of the sick room. Many of the patients are old and debilitated and react to cold fresh air not with a favorable response but with cyanosis and collapse. A room temperature of from 60 to 70 degrees with free circulation of fresh air but without exposure to draught is desirable.

Recently the use of oxygen in certain types of cyanotic cases has been considerably discussed. It seems clear, however, that special apparatus is necessary for the efficient use of this measure. This type of apparatus is now on the market and is being used routinely in the treatment of pneumonia in some of the larger hospitals throughout the country with very satisfactory results and with a marked lowering of the mortality.

Many physicians of long experience insist that, whether exposed or not. the arms, shoulders and chest should be continuously swathed in a flannel jacket, which can be easily made extemporaneously. The use of camphorated oil on the chest in conjunction with the flannel jacket is of some benefit.

The diet should be sufficient to sustain him in the fight he is making, but one should be ever on guard against the digestive disturbances which are so frequent in this disease. Physiologists and physicians have shown beyond doubt not only that liberal feeding is desirable but also that it is feasible. Theoretically a liberal ration of food would seem indicated in such infections as pneumonia. The physicians enthusiasm must be tempered, however, by one consideration, namely, the patient's reaction to the effort of digesting large amounts of food, but it is wiser to wait until the severity of the reaction has abated. Better to have the patient loose a few pounds than to jeopardize his life by over-exertion. Here again the services of a skilled nurse who can sense the correct point to which feeding can be pushed are invaluable.

In a general way, however, certain directions may be laid down. The diet should be approximate in caloric content as nearly as possible the maintenance requirements, roughly speaking from 2,000 to 3,000 calories per day for the adult of average weight. It should be offered to the patient in five or six small portions rather than in the form of three larger meals, to avoid the over-strain associated with a sudden loading of the stomach. The food should be bland, mechanically non-irritating, and readily digestible and should be of a sort that minimizes chewing. Such articles as milk, milk products, soft eggs, jellies, junkets, custards, broth, coffee, scraped meat, puree of vegetables and fruit juices may readily be combined according to the above outline. This, of course, applies to the sicker patients. In mild broncho-pneumonia the feeding may be essentially similar to that in health provided intelligent conservatism is exercised.

As in all infectious diseases he should be given as much water as he will take. External hydrotherapy should not be employed, save for the daily, quietly given, tepid sponge bath; the cold pack is a valuable circulatory stimulant but it disturbs the patient far more than is advisable in this disease. As a rule only a few sips are taken at a time and the total voluntary intake in twenty-four hours may be considerably below normal. For this reason it is necessary to force fluids during the course of the fever. There are several manifest beneficial effects; the patient who takes plenty of water is usually in better general condition, his mental condition is clearer, his mouth is cleaner, the urine is free and does not show the usual febrile characteristics, such as, dark color, high specific gravity, albumin and casts. An intake of 2 to 4 liters of fluid daily produces an optimum result without undue burden. In totally uncooperative patients, who are delirious or comatose rectal infusions of water or subcutaneous infusions of physiological salt solution should be given.

In the care of the bowels, one or two easy daily movements are desirable. From one-half to one ounce of liquid petrolatum or mineral oil should be given each night. Enemas if needed for distension. Castor oil should be given any morning when needed. In some cases mild laxatives such as cascara, phenolphthalein, and rhubarb and senna may be adequate. Particular attention should be given to the distension which is always quite common, is distressing and serious, for it often times adds to the respiratory embarrassment. It is best treated by prevention; that is to say, by cleaning out the lower bowel by a 1% sodium bicarbonate enema as soon as the case comes under observation. This enema should be repeated at least every twenty-four hours, a rectal tube being used during the interim. When the distention persists despite these enemas, turpentine stupes may be employed, also injections of pituitrin may be tried(5).

The pain in the side is usually controlled by a judicious employment of adhesive plaster. If very severe and causing restlessness the opiates must be used for its relief. At the present time all the former objections to the use of opiates have been swept away; it is well to bear in mind, however, that some individuals are made quite ill, even to the point of vomiting several times, a few hours after taking morphine. When strapping with adhesive plaster it should be removed as early as possible. Have the patient lie on the back or on the affected side. Hot poultices as a rule are quite preferable for the children.

In many cases of pneumonia the extension of the inflammatory process to the surface of the lung may set up a pleurisy with the usual syndrome of distressing pain in the side or upper abdomen with accentuation on respiration. For the relief of this symptom the administration of morphine is of paramount importance. No substitutes such as codein, can effectively take its place, nor is there any contraindication to its use except in old or extremely debilitated individuals, who already show embarrassment to the respiratory center. In such cases the dose should be small and its effect carefully watched.

Some men object to the use of morphine in pneumonia and use codein in preference for the relief of pain, cough and restlessness; but there can be no doubt that the best results are obtained with the judicious use of morphine in pulmonary edema together with atropine. Dr. Osler stated on his deathbed that the thing that gave him most comfort was morphine and more morphine(6).

A great deal may be said about cough, one of the most distressing symptoms in pneumonia. It should be remembered that cough may arise from irritation in the air passages, even though little sputum is present, or that it may be stimulated by the presence of exudate in the bronchi. In the former case the cough is useless and inconveniences the patient in the most disagreeable sort of way. It is highly desirable to check such cough and this is best done by general sedatives. Here again morphine is of great value though heroin, owing to its special action on the respiratory center, is also useful. Expectorant mixtures, while they have their place and are at times indicated in pneumonia, should not be used to the great extent to which they have in the past. There is an added burden to the stomach causing nausea and even vomiting at times which greatly adds to the discomfort of the patient(7).

In cases of broncho-pneumonia in which an asthmatic element is prominent urgent measures are indicated. If the breathing becomes very labored and if cyanosis is marked, the patient should be placed in a steam tent. Adrenalin hypodermically or atropine may be given. As an isolated symptom, dyspnea is best relieved by morphine.

Restlessness and sleeplessness must be overcome since peace of mind and body are of the utmost importance to the patient. The patient's frame of mind should be so moulded by the person in charge that he shall be convinced that he is about to undergo a long difficult fight and that all his strength and vitality are going to be needed. Business matters and anything that is going to annoy him must be cast aside; overanxious relatives must be kept away from him. Everything possible must be done so that complete rest and comfort can be assured the patient. If opiates are not being employed to control the cough or pain, they will often be required to secure bodily quiet. It is well, however, first to try a milder sedative, such as barbital. The value of glucose in controlling restlessness has been of a very great assistance in recently years. The general appearance improves at once. The features are less pinched. The patient looks brighter and less toxic. The repsiration becomes slower. The pulse becomes slower and fuller. The blood-pressure rises. The pulse amplitude is markedly and persistently increased. The tongue becomes moist. The patient asks for water and food. The kidneys and bowels become active. If the patient was restless or delirious, he becomes quiet and often goes to sleep while the injection is being given. The effect upon mortality has not been studied sufficiently to make a comprehensive presentation at this time; that many practitioners look upon it as a life-saving measure, however, can be easily understood if such results as described above are true.

The fact is now definitely established that anoxemia, i. e., deficiency of oxygen in the arterial blood, occurs in some degree in practically all cases of pneumonia. Except in anemic individuals who may be anoxemic without showing blueness of the skin, this unsaturation of the blood with oxygen is manifested clinically as cyanosis. In summary, it might be said that the disturbance of the gastro-intestinal system is manifested by nausea, vomiting and diarrhea; the respiratory system by increased rate and depth of respiration or by periodic respiration, and later by rapid shallow respiration; the circulatory system by a constant and progressive increase in pulse rate and in the end by a fall in diastolic pressure and cardiac failure; the central nervous system by headache, visual disturbances, irrational state and delirium, and finally coma and death. That is to say that any of these symptoms, when occuring in pneumonia, may be due wholly or in part to anoxemia.

Many of these disturbances due to anoxemia are now being alleviated by the use of oxygen. The old method of administering pure oxygen has been found to be of no benefit to a pneumonia patient. Recently a new type of apparatus for the administering of oxygen in definite concentrations has been of great value. This manner of giving oxygen is the only method in which results of any merit whatsoever are obtained. Diathermy also has a beneficial effect on the pneumonia patient in that it relieves the congestion in the lung permitting of greater aeration, particularly during the stage of resolution.

Recently Mercurochrome has been used to a considerable extent in the treatment of pneumonia. This dye has been used quite extensively in adult pneumonia by scattered practitioners, results in individual cases varying from no good to marvelous. However, an entirely satisfactory study of it has not been made(8).

Quinine is highly bactericidal for the pneumococcus in the test-tube, but the extent of its bactericidal action in the body is as yet undetermined. Solis-Cohen, who is probably the foremost present advocate of its use, believes that its action in vivo is not only bactericidal but definitely antitoxic. It is well known that enormous doses of quinine are tolerated by the pneumonia patient, doses which would deafen or blind or even kill the normal individual, and from this Solis-Cohen reasons that some of the quinine is neutralized by some of the toxin; or, stated the other way about, some of the toxin is neutralized by some of the quinine(9).

Optochin, which is a modification of the quinine molecule as it occurs in cinchona bark, was introduced several years ago by Morgenroth. It has been shown to be highly effective against the pneumococcus in conjunctival and other external infections with this organism, but is far too toxic to use systematically in the treatment of pneumonia. Blindness has occurred in practically all cases in which effective amounts have been used and some degree of permanent visual impairment has been very frequent(10).

One of the most important phases in the treatment of pneumonia is the heart. So often the heart is abused by unnecessary medication even from the onset of the pneumonia that serious impairment of the heart action results. The use of intensive routine digitalis therapy, when there are no definite signs of a failing heart or when there are no disturbances in mechanism, represent an abuse. However, there are certain indications for the heart to receive special care and medication. In many cases of pneumonia of moderate severity from which the patient recovers after seven to ten days of fever, the pulse throughout is no more rapid than is consonant with the elevation of temperature. Also, it not infrequently occurs in fatal cases that the failure seems to be entirely respiratory, the pulse rate and force remaining quite good almost to the end(11).

The disturbances of circulation are manifested by pulse irregularities, which occurs in 3-5% of all cases; dilitation of the heart, which many do not believe to occur, but in recent years, this factor has been taken more and more into consideration. The poisoning of the heart muscle by the toxin. When any one of these manifestations presents itself in pneumonia, digitalization of the patient should be begun. In digitalizing the pneumonia patient one should endeavor to use the minimum amount of the drug which is prevocative of good results. In the giving of digitalis to the pneumonia patient extraordinary care must be exercised. since too much digitalis will produce a certain toxic effect due to the drug itself. Oftentimes on account of the pneumonia toxin digitalis may produce death not infrequently without any warning signs of the usual clinical manifestations of mild or profound toxicity.

There is no evidence that routine digitalis therapy in lobar pneumonia results in a lowered mortality. Clinical symptoms of digitalis toxicity are not sufficient guide in digitalis therapy in lobar pneumonia to prevent increase in mortality when the drug is used. The amount of the drug is a better guide. Digitalis may perhaps be life-saving in an occasional case in whom there is auricular fibrillation or auricular flutter(12).

The treatment of pneumonia with specific serums offers so much of promise that it would be inadvisable and unwise to do less than commend and encourage the further intensive study of this development of therapy. However, it is possible that this phase of treatment has proved so fascinating, has so intrigued the interest of the masters of medicine, that other considerations are being neglected in current medical literature.

It must be remembered that polyvalent serums are still in the experimental stage and that specific serums are of proved value in only a small percentage of the total of pneumonia cases, particularly when the large number of the epidemic influenza variety are included that have been occuring in the last twelve years.

During the last two or three decades there has been a material reduction in the mortality of most diseases. However, in the pneumonias the situation is entirely different. At the present time we find the medical profession without evidences of any material progress in the treatment of these diseases. The advances that have been made in facilities for treatment, in dietetics, and in fact, in every related field should have tended to reduce the mortality unless physicians had fallen short somewhere(13).

One of the main features in the treatment of pneumonia is the avoidance of unnecessary medication and interference. In typhoid and tuberculosis when we began to treat the disease less, and properly care for the patient more, our results improved. The same principle might apply, at least in part, in the treatment of pneumonia.

Such questions as the routine use of digitalis, the administration of oxygen and the method of use, the employment of morphine and to what extent, are unsettled in medicine. These things in the treatment of pneumonia are discussed to a great extent in the literature, but in actual practice the general tendency in the best institutions is away from active medication and toward more effort in promoting the comfort and well being of the patient by the measures of general care.

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SUTURE OF MUSCULO-SPIRAL NERVE, WITH CASE REPORT

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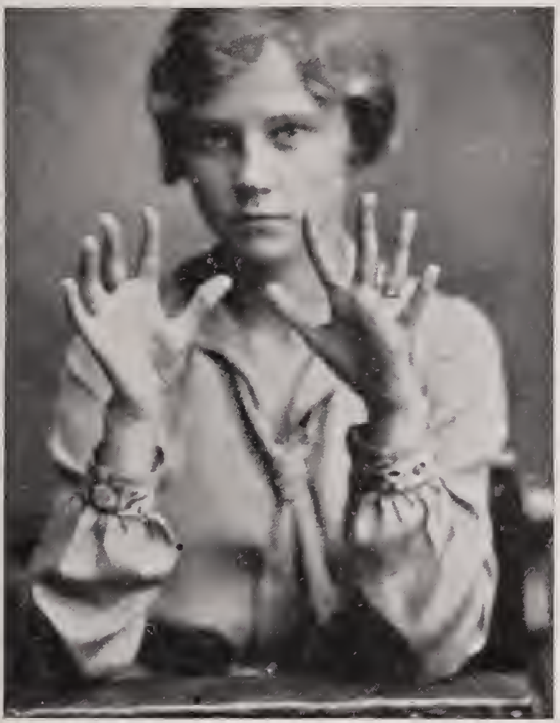
It is a well established fact in traumatic surgery that prompt recognition and early, accurate repair are the absolute essentials to success in nerve and tendon surgery. The following case in which a very pleasing result followed the application of these principals in an injury involving a very important nerve trunk is presented. It is hoped that it will prove of sufficient interest to justify reporting.

The technic of nerve suturing has been well established for years and has been performed in many cases. It calls for accurate repair of severed nerve ends with an apposition as accurate as possible. Fine needles should be used and a silk suture as fine as is consistent with the required strength. Fine tanned or chromic catgut also may be used. It is well to put in one or two mattress sutures according to the size of the nerve, to act as tension sutures and then to approximate the severed ends as accurately as possible with as many small sutures as may be necessary. It is important to handle the nerve as gently as possible and the nerve should not be freed from its bed to a greater extent than is absolutely necessary to secure satisfactory apposition. It has been demonstrated that better healing takes place in cases that can be sutured with minimum disturbance of the nerve trunk distant to the site of injury. A tourniquet should not be used if the work can be accomplished without it as oozing in the field after its removal may be an obstacle to satisfactory healing.



Photograph taken 14 months after injury, showing hand and fingers in extension.

At one time there was a tendency to cover the sutured area with fascial transplants as a protection but time demonstrated that usually they were more of a hindrance than aid and that a covering of the suture line with muscle and fascia in the field of operation with as little tension as possible obtained better results. After suture is completed the injured limb should be dressed in a position that will secure the greatest possible relaxation and lack of tension on the suture line. Median and musculo-spiral sutures should be treated with the forearm on a right-angled splint, etc.

The time elapsing before return of nerve function varies widely, depending upon the individual and also the age. Nerve function returns more promptly and satisfactorily in children than in adults, and some individuals have more inherent capacity for nerve repair than others of the same age. Ordinarily five to seven months elapse before beginning return of function in the most favorable cases, and it varies from this optimum to a period of twenty or even twenty-four months.

ANATOMY

The musculo-spiral nerve is the largest branch of the brachial plexus and the most important nerve trunk of the arm. It arises from the posterior cord of the brachial plexus and descends behind the third part of the axillary artery and the upper portion of the brachial. It accompanies the superior profunda artery into the interval between the inner and outer heads of the triceps, winds around the musculo-spiral groove, descends between the supinator longus and brachialis anticus to the front of the external condyle where it divides into the radial and posterior interosseous branches.

The radial nerve is cutaneous in function and descends under cover of the supinator longus. At the middle third of the forearm, it joins the radial artery and running parallel to it and to the inner side about three inches above the wrist it dips under the tendon of the supinator longus, pierces the deep fascis at the back of the wrist and divides into its terminal branches. The posterior interosseous branch descends in company with the posterior interosseous artery along the interosseous membrane to the back of the carpus where it ends in a ganglion from enlargement.

FUNCTION

The musculo-spiral supplies the muscles in the back of the arm, all the supinators and extensors of the forearm, sends branches to the elbow and wrist joints, supplies a strip of skin in the middle and back of the arm and forearm to the wrist, the dorsal surface of the thumb, index and radial half of the middle finger.

SYMPTOMS OF INJURY

Paralysis of the extensors causes the hand to drop flaccid at the wrist and the fingers are flexed, the supinators and extensors cease to act and there is loss of sensation in the area supplied by the radial nerve. The wrist drop is most striking and is diagnostic of musculo-spiral injury.

CASE REPORT

On August 22, 1929, E. L., aged 12, was playing with an old baby carriage. The rubber tires were worn off and the wheels were sharpened by much running over concrete pavements and sidewalks. She was riding in the carriage while her cousin pushed it, when she fell, catching her right arm between the body of the carriage and the cramped front wheel. The sharp edge of the wheel cut into the caught arm like a knife, and a deep lacerated wound resulted. She was seen at the Brodstone Memorial Hospital at Superior a few moments after the accident. The location of the wound and the extent of the trauma suggested the possibility of musculo-spiral injury, and examination established the diagnosis. She was utterly unable to extend the hand of the injured side and the fingers were in moderate flexion.

Under ether anesthesia, the wound was explored after careful cleansing with ether and iodine. The musculo-spiral nerve was readily recognized lying in the depths of the wound. It was completely severed. The extent of the original wound allowed approximation of the severed ends with no further dissection and the nerve was easily sutured. A fine, curved round needle was used with fine silk. One mattress suture was used as a stay suture, and three sutures approximated the severed ends. The work was performed with the minimum of handling of the nerve trunk and no loosening of the nerve from its bed was necessary. No fascial transplant was used to cover the sutured area, but the neighboring fascia was drawn over it with fine plain catgut. The wound was sutured over a split rubber drain. A prophylactic dose of tetanus antitoxin was administered, with the street dust in mind. The arm was put up on an external right-angled splint and the hand was put on a cock-up splint to provide support for the muscles whose nerve supply was cut off. This is an important point in the after-treatment of any nerve injury, and support should be continued until the injured nerve has completely recovered function.

AFTER-CARE

Patient was kept in bed at the Brodstone hospital for one week. At the end of this time, she was allowed to return home. The wound was healing nicely, the drain had been removed on the fourth day, pulse and temperature were normal and there was no evidence of infection. The right-angled splint to the elbow and the cock-up splint to the hand were retained and the forearm was supported in a large diamond sling. Her progress was checked at frequent intervals. At the end of a month, wound healing being complete and satisfactory, the right angled splint was removed and motion of the elbow was permitted. The cock-up splint was retained. At the end of another week, the splint was removed for massage every other day. Finally, the mother was instructed in the method of doing this, and the patient reported to me once a week for examination. A guarded prognosis was given the family, and they were told it probably would be eighteen to twenty months from the time of injury before function would return.

Five and a half months after the accident, the patient reported for examination and amazed and delighted me by bringing up her hand in perfect extension after I had removed her splint. She said she had discovered her ability to do this some four or five days before while her splint was removed for massage at home. Progress was rapid and continuous from this time on and at the expiration of seven months, the cock-up splint was removed, as the excellent functioning of the extensors made its use seem superfluous. At the present time, the little girl does everything with the hand that she ever did. She has resumed her piano practice, in which she is making excellent progress, and her musculo-spiral function seems 100% restored.

SUMMARY

1. Possible injury to important nerve trunks should always be kept in mind in trauma approaching their anatomic fields.

2. Prompt recognition and early accurate repair are the principal essentials to the successful repair of this type of injury.

3. The operative procedure is much simpler in a recent case and can often be completed through the original wound. This minimizes the disturbance of the nerve trunk from its bed and promotes more satisfactory healing.

4. It is important to dress the injured member in a position that gives maximum relaxation to the sutured nerve.

5. The affected muscle groups should be supported by properly applied splints until the return of nerve function is complete.

6. Very gratifying results sometimes follow the application of these principals.

7. No results in traumatic surgery are more pleasing to patient and surgeon than successful nerve trunk repair.

SUDDEN DEATH FOLLOWING CISTERNAL PUNCTURE

Report of Two Instances.

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Cisternal puncture can safely be carried out by any physician who is familiar with the peculiar sense of giving way experienced when the needle passes through the dura in a spinal puncture, and who has performed a number of cisternal operations on the cadever. The technic is readily available in the original description(1) and in subsequent current literature(2). The operation is now common in many hospitals where meningitis or other lesions involving the nervous system are treated. Ebaugh(3) in 1925 reported 1550 such punctures in 190 patients.

The frequency and ease of cisternal puncture should not cause one to underestimate the dangers of the procedure. Wegeforth, Ayer, and Essick(1), who worked out the method on animals and then on man, mentioned the possible harm resulting. Ebaugh(3) described one case where rather extensive hemorrhage followed cisternal puncture by an inexperienced intern, and autopsy revealed perforation of a posterior spinal vein. Bennett(2) outlines the dangers or contraindications as: (1) intracranial compression—jamming herniation by release of pressure, (2) hemorrhage over medulla from trauma to spinal veins, and (3) trauma to medulla or cerebellum from improper or too deep puncture.

Instances of sudden death following cisternal puncture are appearing in current literature here and abroad, and in evaluating this method it is important to know whether death was actually due to the puncture or to other factors in a patient already in extremis. This evaluation can only be made by a careful autopsy. Reuter(4) has reported a sudden death from cisternal puncture. The patient, a 14-year-old boy with evidence of intracranial pressure, died 30 minutes after puncture. Fluid had been obtained on a previous puncture, but only blood exuded on the last attempt. At autopsy a moderate amount of blood was present in the fourth ventricle, and there were small extravasations in the floor of the ventricle. From one of the small extravasations a fine puncture canal led into the medulla. The brain was swollen and edematous, and the ventricles were dilated. A premature synostosis of sagittal and lamboid sutures was responsible for a chronic hydrocephalus, and the pressure had crowded the medulla and cerebellum downward.

Another example of the danger from displacement of the structures of the region is seen in a recent case recorded by Steindl(5). When the needle was introduced, blood poured out in a pulsating stream. Death followed in four days and autopsy revealed a puncture of the left vertebral artery, with blood accumulated beneath the dura at the base of the brain. A carcinoma of the pharynx had invaded the brain and the medulla had been displaced backward and to the right, bringing the left vertebral artery into the line of the puncture.

We have recently encountered at autopsy two instances of the danger of cisternal puncture. The first is similar to the one recorded by Ebaugh(3) and illustrates Bennett's(2) second contraindication.

Case 1: A four-month old white female was admitted to hospital 12-22-30 for cough of three days duration. A week before the child had coughed for two days. Three days ago the baby had what was thought to be a slight cold, vomited and became stuporous. The cough increased and on the day of admission she grunted on breathing. She was restless and cried when handled.

This child was the youngest of four full term normal children. She was breast-fed for the first five weeks after birth, and since then was on a formula. She had not been gaining for a month, and had vomited quite a bit.

On admission the anterior fontanelle was somewhat tense, the neck was rigid and the eyes staring. The arms and legs were spastic and the Kernig positive. There were slight dullness and increased breath sounds over the upper lobe of the right lung. The right knee jerk was absent and the left was hyperactive. Sensation seemed hyperacute.

On 12-22-30 lumbar spinal puncture revealed a cloudy spinal fluid with 720 cells, 95 per cent of which were polys, and Gram stains revealed large numbers of Gram positive lanceolate diplococci. Cultures of the spinal fluid revealed pneumococci. On 12-23-30 x-rays of the chest revealed peribronchial thickening in the right lung field and a roentgenological opinion of broncho or lobar pneumonia was recorded.

On 21-23-30 she had a few twitchings of the right arm, was very restless, and the spasticity was slightly increased. Lumbar puncture secured 10 c.c. of cloudy fluid. Six hours later 8 c.c. of similar fluid were withdrawn from the cisterna magna and 4 c.c. of 1-1000 optochin injected. On 12-23-30 12 c.c. of turbid fluid containing blood were obtained by cisternal puncture. The physician making the puncture intended to inject optochin, but after obtaining 12 c.c. of turbid fluid, concluded that his needle had been withdrawn from the cisterna. He made several attempts to secure more fluid, and introduced the needle several times to different depths. He then removed the needle and was in the act of doing a lumbar puncture, when the respirations ceased. The autopsy was performed an hour later.

Anatomic diagnosis (M. W. B.): Acute pyogenic cerebrospinal meningitis; recent and diffuse hemorrhage at the base of the brain; acute bronchopneumonia, right; needle puncture mark in occipital region.

Necropsy: "The brain is under increased pressure, and its entire surface is covered by a heavy fibrinopurulent exudate which almost obliterates the sulci. There is a recent hemorrhage at the base of the brain over the leptomeninges. The blood is clotted and is spread out in a very thin layer extending up to the tentorium cerebelli in the back, the temporal lobes on the sides, forward to the posterior clinoid processes, and downward around the spinal cord."

The hemorrhage in this patient was due to lacerated pial veins.

The second instance in our autopsy experience also illustrates the danger of hemorrhage over the medulla.

Case 2: A four-month old white male infant was admitted to hospital 1-19-31 because of crying and fever. About 20 hours before the mother noticed the baby was warm, developed grunting respirations, and a little later had a general macular eruption. Once during the day the baby became cyanosed for a few moments.

The baby has often vomited, but the mother had attributed the vomiting to too great a concentration of its formula. The baby's half sister had meningococci meningitis in September, 1930, and again in October, each time proven by a spinal puncture, and on each occasion under the care of competent physicians.

On admission the baby was well nourished and there was a general macular eruption. The skin was warm. The tonsils and pharynx were somewhat reddened. The neck was not stiff. The ear drums were slightly reddened. The blood hemoglobin was 90 per cent. The R.B.C. were 4,420,000, the W.B.C. 7,750 with 48 polys. Cultures of blood withdrawn from the superior longitudinal sinus revealed meningococci. Subarachnoid fluid aspirated from the surface of the cerebrum through a needle passed through the anterior fontanelle contained meningococci demonstrated by smear and culture. Lumbar spinal puncture at first secured no fluid, but later attempts secured turbid fluid containing 1200 cells and meningococci. A Schilling count of the leucocytes the same day showed a neutrophilia and a shift to the left. The count was interpreted as indicating marked irritation of the bone marrow of the regenerative-degenerative type. The total count of the leucocytes indicated suppressed leucopoiesis.

The child became extremely ill. Attempts to give serum by the lumbar route failed. A cisternal puncture was done to introduce serum. Only blood was obtained, and the needle was withdrawn. The infant died immediately.

Anatomic diagnosis (M. W. B.): Epidemic cerebrospinal meningitis; fresh hemorrhage into the meninges on the posterior surface of the medulla; hemorrhage into the periosteum, dura, and meninges about the anterior fontanelle; areas of atelectasis in both lungs; needle puncture mark over anterior fontanelle; needle puncture mark over occipital region.

Necropsy: "The brain is tense and bulging and there is a large amount of thick yellow pus beneath the meninges, especially marked over the frontal lobes. There is a small amount of hemorrhage, about 1 c.c., over the posterior surface of the medulla in the region of the cisternal puncture."

Careful examination of the medulla showed that the hemorrhage was confined to the leptomeninges. There was no needle tract leading into the medulla itself.

SUMMARY

Two more cases of sudden death following cisternal puncture are added to the list of cases now being recorded from different localities. The operation, while common and technically not difficult, has dangers which must be kept in mind. One should practice the procedure on the cadaver before using it in clinical medicine.

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THE CHARACTER OF LABOR—ITS INFLUENCE ON PUERPERAL INFECTION

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The bacterial entry of the generative tract during parturition comes from sources of infection within the maternal organism or from external sources. The general condition of the mother before she comes to delivery and the state of the birth canal following fetal expulsion have definite influence on the type and severity of infection likely to follow the birth of the child. The character of the labor is important in its effect upon the exhaustion of the patient and its local action upon the pelvic structures.

Premature rupture of the membranes allows an early loss of fluid which may cause dry labor. It is possible under these circumstances for air to gain entrance into the uterus. With air in the uterus, the child may breathe prior to labor but while this is critical: it has no part in this paper. Also, if delay is prolonged, though change in the reaction of the liquor amnii, its normal acidity may be lost and replaced by alkalinity. An alkaline liquor stimulates the cultivation of certain microorganisms. An infected liquor amnii is practical assurance of a postpartum infection, often severe.

Induction of labor by drug is less productive of morbidity than a mechanical method. The bag is quickest acting of all; but requires anesthesia for introduction; the gauze tampon is slightly slower, requires no anesthesia and is not disturbing to the position of the fetus. The bougie requires no anesthesia, does not disturb the child, but because of its slow action encourages growth of any bacteria which may have been conveyed from the lower levels of the vagina up into the uterine, it is probably the least desirable of all methods of inducing labor. Any mechanical induction will increase morbidity two or three times above the normal spontaneous delivery. This slight increase, when weighed against other possible risks, especially disproportion between pelvis and child, may be considerably less than those present with other problems.

Placenta previa often leads to the presence of blood in the upper regions of the vagina. Blood at body temperature is the finest pabulum that can be offered for the development of a fine breed of large, virulent bacteria. In the presence of placenta previa is always found a large increase in puerperal infections. In addition to the stimulating growth of vaginal flora, there is also the possibility of frequent injuries prevalent in low implantations of the placenta.

Death of the fetus is another factor which leads to lowering the resistance of the mother, the offering of organic material for the production of toxines and organic life.

Duration of labor is important from the standpoint of puerperal infection, because the action of normal parturition is such as to spread bacteria. The downward progress of the presenting part during contraction with its upward motion during relaxation smears bacteria from the lower vaginal regions, near the vulva, up into the uterine cavity. The longer the action of labor continues, the more certain is infection to occur. Without any other complication of labor, a mother may die from infection which has been introduced through the action of normal labor itself. Even a rapid labor may bring this about if virulent bacteria are present in the vagina, but with the strain and exhaustion of long labor, with the weakening of resistance, the growth of bacteria on blood clots, liquor, etc., and the constant piston-like action, inflammation is much more certain and much more severe.

With contracted pelvis, with pressure on tissues in malpresentations there is an additional bruising and weakening of the tissues. Bacterial invasion in such case will be much more difficult for the mother to deal with. A state of crushed soft tissues leads to the presence of organic material, blood, serous or clotted. Other retention of membranes, placenta, or lochia allows similar stimulus to already well developed organisms. The Crede maneuver or other operative manipulation during labor if not carefully done will carry organisms from the vulva to the uterine levels, nearer the dangerous regions of possible injuries or the placental site.

Finally wounds in the birth passages, the placental site, cervical lacerations, tears of the vagina, perineum, vulva are most conducive to bacterial entry of the mother. With the variations of resistance there will occur local spread of the disease through the lymphatics, blood vessels, or contiguous organs to produce peritonitis, adnexal masses, cellulitis, sapremia, bacteriemia, and septicemia.

So it is observed that the character of the labor has definite influence of the morbidity of the puerperium. We have no method of bringing all mothers to parturition in the best of condition. Social circumstances keep some patients in bad surroundings, others who might be better favored are too ignorant to take advantage of the favor. We have little ability to prevent the catastrophes or misfortunes during labor. The character of the labor is not always within our power to control; but we can affect the presence of bacteria. If there were no bacteria present, even in the most seriously complicated labor, there would be no infection. Healing would be prompt if no microorganisms were present. This is possible of accomplishment by the application of antiseptics to the vagina and introitus at frequent intervals during labor. The bacteria can be killed or vitiated so that after the third stage, the maternal organsm will throw a cellular wall of protection over each open, raw wound to prevent or minimize the entry of bacteria. There are three types of antiseptics now on the market which are serviceable for this purpose. They are mercurochrome, hexylresorcinol and merthiolate. Any of these in solutions which are non-irritating, non-toxic but definitely bactericidal will kill or vitiate the vaginal flora and prevent their spread in the generative tract during labor. The antiseptic should be applied every eight or twelve hours, depending on the one selected.

It is admitted that vaginal examinations, operative manipulations during parturition, and accidents of labor increase the morbidity of the mother, but this morbidity while not entirely eliminated will be greatly reduced by the use of vaginal sterilization. The same care must be used in these cases as in the surgical patient because every obstetric delivery is of surgical nature. Asepsis is not enough, antisepsis must be used. Every maternity patient, operative or non-operative, should receive vaginal sterilization as the best protection we have to offer against puerperal infection.

POOR DOC!

The ladies have acquired a reputation for forcefulness that is often exaggerated.

A doctor in the hospital, examining a patient with a hole in his head, asked several questions, and ended up with: "Are you married?"

To which the patient replied: "No, sir; I was kicked there by a mule."

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The Year Ahead

A flower unblown, a book unread,
A tree with fruit unharvested;
A path untrod, a house whose rooms
Lack yet the heart's divine perfumes;
A landscape whose wide border lies
In silent shade, 'neath silent skies;
A wondrous fountain yet unsealed,
A casket with its gifts concealed:
This is the year that for you waits
Beyond tomorrow's mystic gates.

—*Horatio Nelson Powers*

ANNUAL DUES

Your annual dues to the Nebraska State Medical Association is $8.00. It is due January 1, 1932 and delinquent January 31, 1932. Send the above amount plus your local County Society dues to your County Secretary.

—R. B. ADAMS, Sec.

PAPERS FOR ANNUAL MEETING

Any member wishing to read a paper at the annual meeting in May, 1932, will send name and title to the secretary, R. B. Adams, Centre McKinley Bldg., Lincoln, Nebr.

MEDICAL ORGANIZATION AND THE NEW YEAR

This is the morning of a new year and we may wonder what it will bring forth. Economists think we are over the worst phase of the depression and that we may look hopefully to the future. Nebraska has had more than the average of hard times because of drouth and consequent crop shortages for several years, added to low prices and unemployment. But the spirit of organized medicine has not been subdued by adverse economic conditions.

The attendance at the last annual meeting was well above the five year average, the discussions showed greater interest than had been manifested for a number of years, and the total paid membership at the end of the past year was 1,193 which is a larger number than were on the rolls for some five or six years. This bespeaks a loyalty to the association of which we are proud, for it indicates that physicians rise above the memory of the effort to get the dollar.

This interest in organized medicine must be founded on the knowledge that the Nebraska State Medical Association means something to the 1200 physicians who underwrite its activities. It is an endorsement of the policies of the association and of the efforts of its official personnel to further the cause of organized medicine.

The *Ohio Medical Journal,* in the September number, aptly says, editorially:

"No sales talk is necessary to emphasize the importance and usefulness of medical organization, both from the standpoint of the public and the medical profession. The record of medical organization speaks for itself. * * * * There are numerous reasons why a physician should maintain membership in medical organization. Briefly, some of these are:

"It is an assurance of the physician's standing in his community, before the public, the law and the profession.

"It helps to maintain organization machinery for the service of the members.

"It makes possible the publication of the *State Medical Journal,* a consecutive record of scientific, economic, social, legal and legislative developments of direct interest to every practitioner.

"It provides the means for contact with state and federal departments and for impressing upon the executive, administrative, judicial, and legislative branches of the government the concerted medical viewpoint.

"It provides the means for cooperation with other state-wide, and national, groups and organizations interested in common problems of public health and professional practice.

"It affords protection against unwarranted mal-practice suits, and the maintenance of a service which makes unpopular various attempts to swindle physicians.

"It makes possible the maintenance of State Association bureaus, departmental and committee activities for the benefit of the entire membership.

"It provides a unanimity of effort in medical and health questions and a united force to combat paternalism, impractical features of state medicine, radicalism, and cultism.

"Medical organization can accomplish much good, during the coming year, in the interests of the public and of the practicing physician, if two important factors are present, namely: The active support, interest and cooperation of every eligible physician in the state, and harmony and unity among individual physicians in their relationship with each other and with the public."

We may therefore reasonably hope that during the year just beginning there will be few, if any, lapses and some accessions.

The time for payment of dues is now at hand and should be done at once for with the first day of February those who have not paid will become delinquent.

THE SHOULDERS DISABILITY INSURANCE PLAN FOR VETERANS

A free disability insurance policy for veterans in place of veteran's hospitals is the proposition advanced by Dr. H. H. Shoulders of Nashville, Tenn., himself a veteran of the medical corps. This plan has the approval of the American Medical Association and is being promoted by the association.

The history of the care of veterans is that following the World War specialists were employed to care for veterans with service connected disabilities. Pretty soon the Veteran's Bureau began operating hospitals for the care of veterans. In 1924 the scope of disabilities cared for was enlarged to include certain specified disabilities not definitely known to be of service origin. In 1926 provision was made for free hospital care for all veterans without regard to the nature or origin of their disabilities.

Today a majority of the cases in veteran's hospitals are of non-service origin. There are now 33,128 beds available in veteran's hospitals and it is stated that the Veteran's Bureau estimates that 129,850 beds will be needed which means an extensive building program during the next few years and untold millions of dollars.

We quote Doctor Shoulders:

"The average cost of constructing veterans' hospitals is approximately $3,500 per bed. The average cost of the professional staff is $151.56 per year per bed. The cost of maintaining these hospitals in 1930 was $4.42 per bed per day, or $1,613.30 per year per bed. The cost of completing the construction program alone would amount to over $360,000,000. The cost of the professional staff would amount to over $19,000,000 per year, when completed. The cost of maintenance, when completed, would be about $200,000,000 per year. These are not all. The cost of equipment and the cost of transportation of veterans to and from the hospitals cannot be even approximately estimated."

"Our proposition is that the government of the United States issue to each veteran a disability insurance policy with two benefit provisions: (1) a weekly cash benefit payable to the veteran during any period of total disability, and (2) the payment of a liberal hospital benefit sufficient to cover the hospital expenses during any period of hospitalization. The hospital benefit is in addition to the cash benefit."

The benefits to the veteran under this insurance plan are as follows:

(a) He draws a cash benefit when totally disabled from any cause, regardless of whether he is at home or in the hospital.

(b) He would draw his hospital benefit when confined in a hospital, in addition to his cash benefit.

(c) The cash benefit would provide a support for his family during a hospital confinement.

(d) The veteran would select his doctor and his hospital.

(e) The benefit would be equally available to all veterans the moment the law is passed."

Under the insurance plan the benefit is available to every veteran the moment it is enacted into a law; it is of equal benefit to every veteran; the veteran who is disabled draws a cash benefit when disabled from a cause which does not require hospitalization; the family of the veteran would receive the weekly cash benefit during the hospital confinement of the veteran; it would be economical to administer in that government organizations already in existence could administer the law and the veterans would receive the full benefit of every dollar spent by the government.

Under the hospital plan of benefits most of the money goes into construction, equipment and cost of administration and is is not equally available to all because of distances and in case of acute illness it is impracticable to get the benefits of veteran's hospitalization for all except those very few who live within easy reach of the institution.

PRESIDENT STARK LOOKS AT MALPRACTICE SUITS

In looking over the increased number of filings of suits for malpractice in Nebraska during the past few months, we cannot help coming to the conclusion that there are altogether too many and that most of them are simply racketeering games and in many instances are practically blackmail. In some ways this is not to be wondered at as in times like these when money is hard to get, when employment is difficult to find and where the problem of living is the paramount problem in peoples' lives, they are going to bring these actions as it promises a means of placing them in funds when apparently all other avenues are exhausted. Because of this economic condition and the state of the public mind an accident or injury is no longer a catastrophy but, to them, becomes an investment.

The members of our profession and of the allied profession of dentistry are being used for about anything and everything that can be imagined, and the worst phase of the whole thing is that juries are constantly being found who will bring in unreasonable and unwarranted verdicts against them. It is an exceedingly difficult thing to explain to the average non-scientific jury when treatment is good and when it is bad, as well as when the doctor has been guilty of neglect and when he has not. But the principal reason for these verdicts in favor of the plaintiff is the fact that in every trial the plaintiff's attorney impresses the jury with the idea that in the event a verdict is returned against the doctor that it is not going to cost him anything as it is all being paid for by some insurance company who is financing all of the defense. Therefore the jurymen reason that so long as they are taking no money away from their fellow citizen and that they are bringing it into their neighborhood from the outside, it will result in good to the community. This very thing has become so pronounced that many of my friends in the legal profession have told me that they feel that the doctor would be in a better position if he carried no malpractice insurance as the juries would not then be so apt to return verdicts against him.

Our Supreme Court in Nebraska, by a vote of five to four, makes it mandatory that the question, "Do you carry malpractice insurance" be answered, giving as the reason that the jury is entitled to know who are all the parties at interest in the action. That same condition does not obtain in many states where an objection to the doctor answering the question will be sustained by the court.

If the jury could only be as forcibly impressed by the defendant's attorney as to what will happen to the doctor when a verdict is brought in against him, it might change their idea concerning who actually pays. In some of our states, in the applications for license to practice the question is asked, "Have you ever been the defendant in a malpractice suit?" In the event that you have been and even if the case was decided in your favor a transcript of the evidence from the court which tried the case and the opinion of the court of final adjudication must be appended to the application. It then becomes purely voluntary with the board to whom this application is submitted whether it will grant a license to the applicant. I believe that that idea will spread, and if so a doctor who has once been sued for malpractice will almost be compelled to remain within the boundary lines of the state in which he is living at the time that the action is brought. There are many states now in which they are getting too many physicians where they assume that so long as a physician had been sued for malpractice it would constitute prima facie evidence of his incompetence and would in that way give them a very easy way to deny him a license. I believe that this fact is one that should be as thoroughly impressed upon the jury by the defendant's lawyers as will be the fact that the doctor carries malpractice insurance, by the attorney for the plaintiff.

We must all remember that the statute of limitations concerning malpractice in Nebraska runs for four years following the date of the alleged malpractice so that all of us are responsible to the law for all of our professional acts during the past four years. At the last session of the legislature we had thought to ask for a change bringing it down to at least two years but because of the furore created by the attack on the Basic Science Law we did not deem it advisable at that time. It is something that should be brought up at the next session of our legislature and I believe if properly presented the legislature will grant our request.

It might also be a good plan that some case, in which this question is involved, be appealed to the Supreme Court so that they will again have the opportunity to pass upon the admissability of evidence concerning whether or not the doctor carries malpractice insurance, for as things now stand the doctor is almost convicted before he starts and ninety-five per cent of the cases are practically blackmail. A continuation of this sort of thing will soon put the doctor in the position of being afraid to practice his profession because he knows full well he is placing himself in jeopardy whenever he does so.

I believe that it is the function and the business of organized medicine and of the friends of organized medicine to do everything in their power to discourage and prevent suits of this kind. Among medical men there may be a few who so despise their competitors that they would be pleased to see a malpractice suit brought against them and that might properly be accused of instigating such a suit. I might say that if that is their attitude they are apt to find themselves in the position of the man who set fire to his neighbor's house and then saw his own burn up from the same fire. If you instigate a malpractice suit, rest assured that the same thing will sometime happen to you, and that when you instigated it, you destroyed, in so far as possible, the reputation and standing of one in your own profession, have laid yourself open to the same charge and have done your part toward increasing the rates for malpractice insurance which means that the money used in the payment for this man's defense comes out of you and your brethren of the profession.

In a recent malpractice suit, which had no foundation in fact whatsoever, a judgment for twelve hundred dollars was given the plaintiff and the total cost of the defense of this suit will amount to nearly two thousand dollars. The premium for malpractice insurance with the company carrying this physician is approximately twenty-seven dollars. That means that almost the entire premium from seventy-four policies will be required to pay the expense of that one case. As this company has approximately four hundred and fifty policy holders in Nebraska it will mean that there are but three hundred and seventy-six other premiums that can be used to pay any other judgments or expense which may be involved in settling any of the thirty-four other malpractice suits now pending. In turn this means one additional thing and that is that the rates for insurance will go higher and higher until finally the doctor will be compelled to pay a large percentage of his gross income for insurance against malpractice. It is easily seen what this will mean as we are more or less of an open target for that type of a grafter and it is simply a measure of self-preservation for every physician, whether he is in or out of organized medicine, to exert himself to the utmost to discourage and prevent a suit for malpractice being brought against anyone.

—Lucien Stark, Norfolk.

THE GENESIS OF SOCIAL INSURANCE

Social Insurance is the hybrid offspring of impracticable sentimentalism and political expediency. It is an epidemic disease first observed in Germany about fifty years ago which has gradually spread and infected a considerable number of the nations of the earth and now has arrived at our very doors. Unless we succeed in establishing a rigorous quarantine of enlightened public opinion, it will surely gain a foothold in this country in the not distant future.

Social Insurance consists of the following subdivisions or parts: Compulsory health insurance, old age pensions, widows' and orphans' pensions, and unemployment pensions or doles. In none of the countries were they all adopted at the same time. Germany adopted compulsory health insurance in 1883, and all of the other forms since that time. Austria adopted compulsory health insurance in 1888; Hungary, in 1891. England adopted old age pensions first and compulsory health insurance in 1911, and the others subsequently. In this country some of the states have adopted old age pensions and some widows' and orphans' pensions, but so far none have adopted compulsory health insurance, for which negative blessing let us raise our voices in thanksgiving.

When the scientific physician is confronted with the problems presented by a new patient, he meets the situation in the following manner: he obtains a complete family and personal history in order to ascertain if possible the causes which have brought about the condition; by his physical examination and laboratory investigations he finds out what variations from the normal have taken place; after all this he is in a position to advise and institute the proper treatment. Let us follow the same course in the study of this problem.

During the late seventies a number of German parlor socialists conceived the idea that the state make itself responsible for the medical care of its workers. The sentiment in favor of compulsory health insurance grew rapidly among the workers, and Bismarck, although expressing serious doubts as to the soundness of such a measure, yet feeling that something had to be done in order to appease the clamor of the proletariat and the alarming growth of socialism, adopted social insurance as a government measure, had a bill drafted and enacted into law.

In England, National Insurance, as it is called there, had a slightly different setting but substantially the same background. In 1910, David Lloyd George in order to strengthen himself politically decided the time for such legislation was opportune. Not being able to speak German, he gathered about himself several interpretors, hied himself to Germany and after interviewing the well paid heads of the German system, and after having been wined and dined and lionized for two weeks or so, he returned to England very enthusiastic about the whole project, had a law drafted, and later secured its passage. In the recent parliamentary election the Liberty party, of which Lloyd George has been the head for many years. elected just four members to Parliament or less than one per cent of the whole number. So while Lloyd George may have saved his political skin by National Insurance in 1911, he certainly lost his hide by it in 1931.

Practically every reform movement attracts to itself a considerable number of well meaning, emotionally impressionable, impractical, irresponsible, very vociferous individuals, and very often a group, usually the very ones who manage the propaganda and who hope to gain some pecuniary benefit from it. Social Insurance is no exception to this general rule.

Some of the common characteristics of reformers is that they want a new law passed for every human ill, and when the law is enacted, they either sit back waiting for the millenium to arrive or they rush off looking for new evils to correct by new laws forgetting to see to it that the law just passed is being properly enforced, and forgetting at all times that all laws must depend for their enforcement not upon supermen but upon men often of less than average intelligence and integrity, upon politicians and their henchmen, who are quick to see how these usually unsound and loosely drawn laws can be converted to their own advantage.

(The above is what is actually happening in some of the countries where such laws are in operation as future installments will show).

—Edward H. Ochsner, Chicago.

A SUGGESTED DIAGNOSTIC TEST FOR CERVICAL CANCER

Apropos to the recent cancer issue of this Journal, emphasizing the necessity of early diagnosis of cancer, I wish to submit a test which is helpful in demonstrating early cancer of the cervix. This was originated by Doctor Walter Schiller of the Kermauner Klinik of Vienna. It is based on the fact that glycogen is markedly diminished, or is absent from the cells, when carcinoma begins. If this test proves to be of value it should be of special interest to obstetricians and gynecologists. The test is as follows:

The vagina, and especially the cervix, is dried, by gently wiping with absorbent cotton. The cervix is painted with Lugol's solution. The Squamous epithelium of the normal cervix becomes a deep nut brown. Areas of early epithelioma and hyperkeratosis remain unstained. Ulcerated areas also are not stained. These obviously would be apparent without any test. Its value lies in demonstrating lesions before ulceration occurs. These unstained areas of epithelium are removed with a sharp curet. It is not necessary to go deeper than the basal layer of the epithelium. This tissue is then sectioned and examined microscopically. Changes found in such early lesions show only an atypical keratinization and a disturbance of the axial relation of the cells of the epithelium to each other. This stage is too early to show invasion. If the latter has begun, however slight. it can no longer be considered early stage. The changes mentioned are slight, but definite. Here, as in all other regions of the body, the microscope alone can detect these early lesions. Gross cancer is never early cancer.

Treatment of a cervix showing such changes, is simple amputation of the portia, and may be regarded as prophylactic, rather than curative surgery.

—Frederick W. Niehaus, Omaha.

THE SIOUX VALLEY EYE AND EAR ACADEMY MEETING

The annual meeting of the Sioux Valley Eye and Ear Academy was held at the Fontenelle Hotel, Omaha, Nebraska, on November 18. The attendance was one of the largest the meeting has ever had. Dr. C. T. Uren was presiding officer.

The out of town members and visitors were the guests of the Omaha and Council Bluffs Eye and Ear Society at a luncheon at the Fontenelle Hotel.

At the morning session Dr. Albert N. Lemoine of Kansas City, gave a most instructive talk on the Management of Cataracts and Their Complications.

Dr. Fred J. Pratt of Minneapolis, Minnesota, followed with a very interesting illustrated paper on intranasal operations, stressing the important points for successful intranasal sinus operations.

At the afternoon session Dr. Samuel A. Kellar of Sioux City, gave a paper on the Drainage of Ludwig's Angina stressing the importance of early surgical interference and the necessity of through and through drainage. This condition which formerly was viewed with such grave concern was shown to be amenable to surgical treatment with a small mortality if proper drainage was instituted early.

Other interesting case reports were given by—Dr. J. Calvin Davis on The Use of Sulzberger's Iodine Powder in Chronic Otitis Media; Operative Technique for Occlusion of the Posterior Nares by Dr. Royal F. French of Marshalltown, Iowa; a report of two cases, Ligation of the Carotid Artery to Control Nose Bleed by Dr. L. G. Howard of Council Bluffs; Additional Pathological Studies of Chronic Maxillary Sinusitis by Drs. Lowell Dunn and Jno. B. Potts of Omaha; Septicemia With Thrombosis of the Jugular Vein as a Complication to Tonsillitis by Dr. T. R. Gittins of Sioux City.

Dr. J. B. Gregg, Sioux Falls, was elected president for 1932, and Dr. F. H. Roost, Sioux City, was reelected secretary-treasurer.

—J. B. Potts, Omaha.

DIAGNOSIS AND THE DOCTOR

"At all times the world is fairly teeming with people suffering from disease far advanced to the incurable stage—disease which might have been corrected had the true nature thereof been discovered in the beginning. With medical doctors the first step always is to make a diagnosis, that is to ascertain the true nature of any ailment.

"Even the moron knows that, when a fire starts in a building that fire must be discovered and extinguished at once if that building is to be saved and the adjoining buildings spared the disaster of a general conflagration. Yes, that fire must be extinguished immediately—not by prayer, not by denying its existence, not by yanking at the pillars and door posts, not by rubbing the shingles on the roof by way of 'adjustments,' not by any of these 'New Methods'—that fire must be extinguished by the application of that natural law which is as old as eternity, that fire and water are incompatible."

—Extract from Medic-Cult, The A-B-C of the Medical Profession, by Dr. B. F. Lorance, Auburn.

THE EDWIN SMITH SURGICAL PAPYRUS X

A Fracture of the Clavicle: If thou examinest a man having a break in his collar bone and thou shouldst find his collar bone short and separated from its fellow thou shouldst say concerning him: One having a break in his collar bone. An ailment I will treat. Thou shouldst place him prostrate on his back, with something folded between his two shoulder blades; thou shouldst spread out with his two shoulder blades in order to stretch apart his collar bone until that break falls into place. Thou shouldst make for him two splints of linen, and thou shouldst apply one of them to the inside of his upper arm and the other on the under side of his upper arm." (Case XXXIV).

PROCTOLOGIC HINT NO. XV

Frequency of stool is often produced by an impaction within the rectum. A digital examination in every case of diarrhoea will often help to solve its cause.

—L. E. Moon, Omaha.

EDITORIAL PARAGRAPHS

The Nebraska Section, American College of Surgeons will have a meeting in Omaha, February 23 and 24.

It is stated that there was three times as much pollen in the air during the hay fever season this fall than in previous years.

This is to advise the next Basic Science examination in Nebraska will be given January 12-13, 1932, State House, Lincoln, Nebraska.

It is authoritatively stated that there were 460 deaths from tuberculosis last year in Nebraska and that there are 40,000 persons afflicted with tuberculosis in the state.

We have heretofore said that in the opinion of the laity the last doctor consulted is always right. There is a popular saying that "the unlucky doctor treats the beginning of an illness; the fortunate doctor, the end."

A court in this state has recently been called upon to decide whether home brewed beer is necessary as medicine for a child of nine years and whether it is proper to give it on the recommendation of a physician.

It is stated with good authority that an excess of fruit produces pruritis ani in some people and that persons so afflicted should cut fruit, particularly oranges, grapefruit and apples from the diet.

The American Board for Ophthalmic Examinations will hold an examination in New Orleans on Monday, May 9th, 1932, at the time of the meeting of the American Medical Association.

Dr. J. P. Lord, Omaha orthopedist, before the local Rotary club stated that Nebraska does not have adequate facilities for the care of crippled children, the one institution at Lincoln, being insufficient for the needs of the state.

The annual meeting, Nebraska State Medical Association will be held in Lincoln May 24, 25 and 26. This is a little later than usual but seemed necessary on account of the American Medical Association meeting in New Orleans, May 9 to 14 inclusive.

Advertising has been at a low ebb for some months, but this *Journal* starts the years 1932 with the following new advertisers: Wilbur Medical Supply Co.; Lederle Laboratories; Lancaster Optical Co.; Battle Creek Food Co. Read the ads and patronize the advertisers.

A physician asks, "Why are Broadcasting stations or Broadcasters allowed to advertize their wares, cures. etc., over the air, yet a person is subject to prosecution if he advertizes a sure cure in any other way?" We do not know, except that the mills of the Gods grind slowly. The "Gobble-uns" will get them in time.

Before the Omaha Lions club recently Dr. C. W. M. Poynter, dean University College of Medicine, stated that the University hospital's bed capacity of 220 had been taxed to capacity since July and that this condition is overtaxing the hospital's budget from state funds and threatens to seriously impair the efficiency of the hospital as a teaching institution.

The Academy of Medicine of Cleveland through its Health Education Foundation, is presenting to the public on four Sunday afternoons free public lectures: "Life in a Strenuous Age"; "What Science Knows About Cancer"; "Why Think About Eating"; "Fighting Death After Forty". The S. M. A. Corporation of Cleveland made these lectures possible.

The Otoe County Medical Society is looking for a place in the sun. Volume I, No. 1 of the *Otoe County Medical Society Bulletin* reached this office a few days ago. The idea of a county society bulletin is a good one if it can be financed without burdening the society treasury. The membership of the Otoe County society is 26.

We blush with pride: "Dear Doctor Long: The *Nebraska State Medical Journal* is an excellent publication. You are much to be commended for the good results that have accrued from your years of hard work in bringing the *Journal* to its present standing. I have read it for many years * * * * * and still enjoy it."—Claremont, Calif.

Professor Henry E. Sigerist of Leipsig appeared at the University College of Medicine, December 17, with a lecture on the medical literature of the early middle ages. He is a good speaker, at home with the English language and an internationally recognized authority on medical history. This was an Alpha Omega Alpha lecture.

We notice that at least one county in this state has called on morticians for sealed bids for the burial of the county poor which is a new one to this editor; but immediately following is a call for sealed bids for county physician and again we want to express our hope that no physician will enter a bid. Competitive bidding for the purpose of being allowed to care for the needy poor is derogatory to the profession and unsatisfactory from every point of view.

The race problem as it exists in the southern states is wholly incomprehensible to the people of the middle western states. From Georgia comes this concrete case: An outstanding colored woman, a Y. W. C. A. worker, said to have been revered alike by white and colored folks was dangerously injured in an auto wreck. Physicians called to her aid did all they could for the woman, but she could not be hospitalized in her home town because no colored people are admitted to this hospital. She was therefore moved fifty miles in an automobile to a hospital for colored people where she died next morning. "Man's inhumanity to man."

IRISH JOKE

An Irishman, in order to celebrate the advent of a new era, went out on a little lark. He did not get home until three o'clock in the morning, and was barely in the house before a nurse rushed up, uncovered a bunch of soft goods, and showed him a complete bunch of triplets. The aghast father looked up at the clock, which was just striking three, then at the poker hand held by the nurse, and said: "Oi'm not superstitious, but thank hivin that Oi did not come home at twelve."

NECROLOGY

Mortimer L. Hildreth, Lyons, Nebr., native of Lee, Mass.; Rush Medical College, 1880; located for one year at Tekamah before locating at Lyons where his life work was done; professor of internal medicine Sioux City College of Medicine, 1885-1887; an outstanding member of Nebraska organized medicine for fifty years; secretary Nebraska State Medical Society, 1889-1892; president same society 1892-93; delegate American Medical Association, Baltimore meeting, 1895; president Nebraska Railway Surgeons Society, 1887; delegate Pan-American Medical Congress, Washington, 1893; active for many years in the civic affairs of the community; a man of pleasing personality and quiet subtle humor; died December 4, 1931, of angina pectoris, aged eighty-one years. A widow, son and two daughters survive. Dr. J. P. Lord, Omaha, representing the medical profession gave a eulogy at the bier in part as follows:

DR. M. L. HILDRETH

"Fifty years of practice is a long span, and a community of friends and acquaintances will cherish his memory with gratitude and esteem.

"Dr. Hildreth was recognized as one of the premier outstanding men of the profession for all the years of his long active career. A man always wholly abreast of his time. Evidences of this were his many positions of honor and distinction. He was honored, loved and most highly respected by his profession who knew his actual worth as a doctor, a man and as a friend. There was a rugged honesty about Dr. Hildreth which so frequently characterizes those who have pioneered and have risen from humble beginnings.

"It was a special privilege of mine to have had a close warm friendship with Dr. Hildreth and a special intimacy because we were both graduates of Rush Medical College. Our professors and teachers were the same as were also the graduates of those times of more than 50 years ago. So these many associates and friends furnished a background of common interest, fellowship and a real friendship during these many years.

"The life span of man as portrayed in holy writ is three score and ten, and when a man is privileged to live after that it is as borrowed time so to speak, and we all rejoice that we were favored and blest by having him as a friend and consellor for these many later precious years. We are all comforted and our griefs are mellowed by the passing of those dear to us, who have lived a full rich and complete life. We Doctors are somewhat fatalistic in that we are compelled to recognize that death after a complete and well rounded life is but a physiologic process, just as is our coming into this physical existence.

"Life is summarized thus by the late Dr. Joseph Parker of London:

LIFE MEANS:
Tender teens
Teachable twenties
Tireless thirties
Fiery forties
Forcible fifties
Serious sixties
Sacred seventies
Aching eighties
Shortening breath—
Death—the Sod—
God."

A celebration honoring Doctor Hildreth, on the completion of fifty years of practice, sponsored by the Burt County Medical society and attended by many physicians from nearby counties was tendered him June 22, 1930, at which time a gold watch was presented to him, a number of physicians presented felicitations and numerous congratulatory letters were read.

About twenty physicians from nearby towns attended the funeral, including the present state president and four former presidents.

Artemas I. MacKinnon, Lincoln, Nebr.; native of Prince Edward Island; McGill University Faculty of Medicine, 1892; surgeon for the Burlington Lines at Havelock for several years immediately following graduation before locating in Lincoln in the nineties; distinguished surgeon; outstanding member Nebraska State Medical Association; one of the organizers of the American College of Surgeons; member Western Surgical Association; member and sometime president, Missouri Valley Medical Association; pioneer in operative surgery; originator of complemental jejunostomy for obstruction of bowels; devised "MacKinnon operation" for recurrent dislocation of the shoulder as published in Binnie's Surgery; instructor in surgery in the University of Nebraska Dental College until ill health compelled him to relinquish the work; member of the surgical staffs of all the Lincoln hospitals; a colorful and outspoken character in all his dealings; died December 22, 1931, after an illness of varying intensity covering two years, aged sixty-three years. A widow and two daughters survive.

William M. Davis, Omaha, Nebr.; Missouri Medical College, St. Louis, 1884; practitioner in Omaha for many years; member Nebraska State Medical Association; died October 10, 1931, aged seventy-five years.

Arthur L. Lindquist, Omaha, Nebr.; Bennett Medical College, Chicago, 1906; practitioner in Omaha for 18 years, formerly in practice at Stanton, Montgomery county, Iowa, and sometime coroner of that county; member of staff Nicholas Senn hospital; died shortly after a minor operation, December 6, 1931, aged forty-eight years.

AUXILIARY NOTES

This should be of great interest to all Auxiliary members: Although unorganized, the wives of the Cass County physicians have succeeded greatly in the primary aim of any Auxiliary—that of social cooperation. Since they have been coming to dinner with their husbands (and incidentally enjoying every minute of the papers and discussion following) the meetings have been more enthusiastically attended than ever before!

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The Lancaster County Auxiliary members are working every Saturday, the most difficult day, in the Community Chest Thrift Shop, where food and clothing are distributed to the needy.

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The present officers for Dodge County are: President—Mrs. C. G. Moore; Vice-President—Mrs. R. T. Van Metre; Secretary-Treasurer—Mrs. H. N. Morrow. The county has taken over the work which they started—that of furnishing milk for the undernourished in the schools.

* * * * * *

Because the various county auxiliaries of Nebraska have different times for election of officers and different fiscal years it has resulted in increased labor, a lack of continuity in the year's work and much confusion. Therefore, all county organizations have been requested to elect their officers in April, to take office at the close of the State Medical Meeting in May, and close their books March 31st to correspond with the National fiscal year. Wherever the election is not held in April, the present officers should continue in office until April, and the treasurer should collect proportionate dues to cover the time from the end of the present fiscal year to March 31.

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Mrs. A. B. McGlothlan, National President, in October made an eighteen-day trip through the western and northwestern states following an itinerary mapped out by the national chairman of organization, Mrs. James Blake, first vice president. Discovery of fine work in many states and giving inspiration to more everywhere were incidents of this tour. For example, in Colorado the Education Envelopes of the Auxiliary are provided for the State University Extension service, and the State Traveling Library Service, and for all Auxiliary county chairmen.

Mrs. McGlothlan found enthusiasm and good work in Oregon and the heartiest cooperation from the State Medical Association. The state meetings were held in Eugene, Oregon, and the State Parent-Teacher Association was holding its convention at the same time in the same city. Mrs. McGlothlan was invited to speak before the latter organization. She did this with fine reaction from that Parent-Teacher meeting. Not only was she the principal speaker at the state Auxiliary Convention, but was asked to speak to the State Medical Association on two different occasions.

The following extract is from the resolutions passed by the House of Delegates, Oregon State Medical Society, October 24, 1931:

WHEREAS, the Woman's Auxiliary has made notable progress during the past year in organizing the wives of physicians and interesting them in the dissemination of sound health information to the lay public, particularly in their various local clubs; and

WHEREAS, the aid of the Auxiliary is indispensable in the promulgation of such knowledge and assisting the medical profession in the work of educating lay people to the great truths of scientific medicine;

THEREFORE, BE IT RESOLVED, that the House of Delegates of the Oregon State Medical Society express to the Woman's Auxiliary its deep appreciation of their invaluable services and pledge its wholehearted support to their future program.

—Mrs. Roy H. Whitham.

THE SOCIETIES

A regular meeting of the **Lancaster County Medical Society** was held December 1. Dr. Alexis F. Hartman, associate professor of pediatrics at Washington University was the guest of the evening. He was entertained by a small group at dinner at the University club and addressed the society in the Sharp building on "Theory and Practice of Parenteral Fluid Administration for the Relief of Dehydration and Changes in the Acid-Base Balance."

The most of the evening he devoted to a discussion of the chemical changes which occur in the body as a result of the increase or decrease of acid and base radicals. He demonstrated the changes that occur in pyloric stenosis, in repeated gastric lavage, in diabetic acidosis, in diarrhea, and intestinal or pancreatic fistula. He further demonstrated the chemical recovery which ensues in these conditions upon the parenteral administration of sodium chloride solution, bicarbonate solutions and sodium lactate solution. He showed particularly the effect which can be produced by the administration of sodium lactate in Ringer's solution. This solution has been known as Hartmann solution. It is effective in either acidosis or alkalosis. In acidosis it supplies the deficient sodium ion which is liberated upon the destruction of the lactate radical. In alkalosis it supplies the deficient chloride ion in the form of Ringer's solution and the sodium lactate does no harm if the kidney function is adequate.

Dr. Hartmann devoted the last part of his talk to a consideration of edema particularly the type which occurs in chronic nephritis or nephosis. He outlined the following mechanism of production of edema: Normally there is a balance between the hydrostatic pressure in the capillaries and the osmotic pressure of the blood proteins. In these conditions the blood proteins are greatly lowered through the loss of albumin in the urine and the osmotic pressure is decreased. Thus, the hydrostatic pressure exceeds the osmotic pressure and water is lost to the tissues, producing edema. Anything increasing the osmotic pressure and of the colloids will cure the edema. This may occur (1) spontaneously, (2) by blood transfusion, (3) by intravenous injection of accacia solution.

—Roy H. Whitham, Secretary.

The regular meeting of the **Omaha-Douglas County Medical Society** was held November 10, 1931.

Meeting called to order by President Pinto.

The first speaker on the scientific program was Dr. Donald Wilson. His subject was "Exfoliative Dermatitis and Thrombo-angiitis Obliterans." He presented a case report on which the autopsy findings were read and discussed by Dr. H. E. Eggers.

Dr. B. B. Davis then talked on Cancer of the Stomach.

Dr. J. J. Keegan read a paper on "Meningeal Hemorrhage." He offered a case history with the patient presented and called on Drs. Henske and Judd for further details regarding the case.

The next paper on "Indications for Transfusions in Children" was read by Dr. R. B. Eldridge.

Dr. Ralph Luikart gave a very comprehensive report of the meeting of the Central States Association of Obstetricians and Gynecologists which was held in Chicago on October 20th and 21st.

The **Dodge County Medical Society** met over a dinner at Hotel Pathfinder, November 30th, at 6:30 p. m.

Dr. W. O. Colburn, of Lincoln, read a paper on "Pediatric Allergy."

Dr. F. L. Rogers, of Lincoln, gave a "Review of 50 Cases of Diabetes Mellitus."

Dr. Andrew Harvey reported two cases of Jacksonian epilepsy.

The **Dodge County Medical Society** held its annual meeting at the Pathfinder hotel following a dinner to the doctors and their ladies. Dr. F. A. Long, Madison, spoke on "The Shoulders Plan of Disability Insurance for Veterans in Place of Veteran's Hospital Service". The plan gives a disability pension, allows the veteran to choose his own physician and hospital or be cared for at home among friends inafter a lot of red tape. Dr. C. G. Moore was elected president; Dr. Andrew Harvey, secretary-treasurer. Following the meeting the Auxiliary ladies entertained the doctors with a Christmas party.

At the **Lincoln County Medical Society** at North Platte, November 12, Dr. C. W. M. Poynter, dean University College of Medicine, spoke on experimental therapeutics on rats, guinea pigs and other animals. Moving pictures were shown to illustrate the theme.

The **Fillmore-Saline Counties Medical Society** met at Milligan with 17 physicians present. Following a dinner at a local cafe, Dr. Adolph Sachs of Omaha spoke on asthma, comparing it with many other allergic diseases that mankind is subject to. Dr. W. L. Sucha of Omaha spoke on the subject, "Surgical Pitfalls for the General Practitioner," referring particularly to the many minor injuries attended by physicians at their offices and a few of the major cases physicians must deal with before referring the patients to hospitals for attention. Both talks brought out considerable discussion and all left feeling the evening had been well spent.

The society will hold its next meeting at Tobias next month and is promised a feed of moose, venison or wild duck and sour gravy and all promised to be there well prepared to do justice to the rich menu.

The annual wild game dinner meeting of the **Saline-Fillmore Counties Medical Society** was held at Tobias, December 2, Dr. A. C. Blattspeiler being host. The menu offered roast moose, roast venison, roast wild duck. About fifty physicians were present and our reporter says it was too fine an affair to pass unnoticed. The program follows:

"Radiation Treatment of Uterine Lesions," Roscoe L. Smith, Lincoln, Nebr.

"Ruptured Uteri With Adherent Placenta," C. L. Hustead, Falls City, Nebr.

"Nervous Indigestion," A. A. Schultz, Fort Dodge, Iowa.

"Preoperative and Postoperative Complications of Appendicitis," Stewart Bell, York, Nebr.

"A Resume of the Diseases of the Neglected Terminal Bowel," C. C. Hickman, Lincoln, Nebr.

"The Modern Viewpoint of Traumatic Epilepsy," with movies, K. S. J. Hohlen, Lincoln, Nebr.

The **Richardson County Medical Society** met at the Hotel Weaver here Wednesday evening. Following a 7 o'clock dinner there was a fine program. Dr. Adolph Sachs of Omaha talked on "Asthma" and Dr. Sucha, also of Omaha, talked on "Industrial Surgery." The members of the Auxiliary who were also dinner guests at the hotel, spent the evening at the home of Dr. and Mrs. J. M. Greene.

The **Cedar, Dakota, Dixon, Wayne and Thurston Counties Medical Society** held its quarterly meeting at Laurel, November 19.

Drs. W. F. Cody and R. J. Harrington of Sioux City and Drs. Clyde Roeder and Charles Moone of Omaha were present and gave lectures and addresses during the afternoon.

At six o'clock a dinner was served the entire group at the Doctor Luton home. Evening hours were spent socially.

Dr. C. T. Ingham of Wayne was chosen president, Dr. G. E. Peters of Randolph, vice president, and Dr. S. H. Cook of Randolph was reelected as secretary-treasurer.

The annual meeting of the **Adams County Medical Society** was held at the Alexander hotel, Hastings, December 1st. Dr. A. J. Boren was elected president; Dr. D. W. Kingsley, secretary-treasurer, and Dr. G. L. Pinney, delegate. Dr. Lucien Stark, Norfolk, state president, gave a rousing talk on the obligations of members of the profession to one another, with special reference to malpractice suits.

The annual meeting of the **Burt County Medical Society** was held at Oakland, December 4. The meeting was preceded by a dinner at a cafe. Dr. S. A. Swenson was elected president, Dr. H. W. Benson, secretary-treasurer. Physicians from Omaha, Sioux City and Fremont were on the program.

At the annual meeting of the **Platte County Medical Society,** held at Columbus, December 9, Dr. W. R. Neumarker was reelected president, Dr. E. E. Koebbe, secretary-treasurer. Dr. Koebbe was also chosen delegate.

The business meeting was held following a dinner at the Thurston hotel. A number of short talks and discussions on medical economics featured the meeting.

The annual meeting of the **Madison Five Counties Medical Society** was held at Norfolk following a dinner attended by upward of thirty.

Dr. P. B. Lonergan, Wisner, was elected president and Dr. R. A. Frary, Stanton, was reelected secretary-treasurer.

Dr. F. A. Long presented "The Shoulders Plan of Veteran's Insurance in Place of Veteran's Hospitals," and Dr. P. B. Lonergan spoke on "The Physician Plays Santa Claus" in which he compared the physician who does not do systematic collection to Santa Claus. A dance followed the meeting.

The **Cass County Medical Society** met at the Rest Haven hotel in Weeping Water, December 8th. Papers were read by Dr. E. W. Hancock, "Serums and Antitoxins, in Treatment of Disease"; Dr. C. C. Hickman, "A Review of the Disease of the Terminal Bowel"; Dr. Roy Whitam, "Minor Surgery." The doctors who gave the program were from Lincoln.

An election of officers was held and Dr. O. E. Liston, Elmwood, was reelected president, Dr. L. D. Lee of Murdock was reelected secretary-treasurer; delegate to state medical society, Dr. L. D. Lee.

HUMAN INTEREST TALES

Dr. W. E. Bridgemen, formerly of Witten, S. D., has located at Anoka.

At the Nebraska City clinic for crippled children seventy were examined.

Dr. M. Mesropiam has located at Chadron. He came from Philadelphia.

An addition to the Nurses' Home, University of Nebraska College of Medicine, is about to be built.

Dr. C. E. Rice, Odell, suffered the theft of his car recently, from a farm home while making a call.

Dr. Harold Hooker, Long Pine, and Miss Bernice M. Bardon, Spencer, were married November 25.

A discouraged member of our profession in this state sent a bullet into his brain, recently, fortunately without fatal result.

Dr. J. W. McKean, former Omahan, but for many years a medical missionary at Changmai, Siam, has located at Claremont, Calif.

Dr. M. F. Hall, Neligh, was elected president of the Nebraska third party movement at a state convention held in Omaha, December 1.

Dr. L. L. Nelson, Norfolk, suffered a cardio-renal breakdown and has been reported seriously ill at the home of his parents at Mondamin, Iowa.

A Baby Health clinic, sponsored by the Woman's club, was given at Falls City, the local medical profession assisting by making the examinations.

Fellowship in the Western Surgical Association was conferred on Dr. Robert D. Shrock and Dr. Clyde A. Roeder, Omaha, at the recent meeting in Denver.

Dr. G. M. Dishong, before the first of a series of seminars of the Phi Delta Epsilon, Omaha, gave an address on "Sex in Relation to Mental and Nervous Diseases."

Dr. B. B. Davis was luncheon speaker at the December meeting of the Auxiliary of the Omaha-Douglas County Medical society, his topic, "Periodic Health Examination."

Bloomfield's five hundred school children have been given the Schick test and the follow-up work with toxin-antitoxin is being taken care of by the parents and the board of education.

Dr. Olga Stastny has returned from an extended European tour which included attendance at the Medical Women's International association at Vienna to which body she was a delegate.

Students of Creighton University College of Medicine have organized a medical history club, the fourth in the country, the other three being at Johns Hopkins, The Mayo Clinic and Ann Arbor.

Dr. J. E. Summers, Dr. B. B. Davis, Dr. A. J. Brown, Dr. J. P. Lord, Dr. H. C. Miller and Dr. Herbert H. Davis, Omaha, attended the meeting of the Western Surgical association at Denver early in December, the first two mentioned presenting papers.

Dr. L. T. Sidwell, superintendent of the Nebraska hospital for tuberculous, gave a talk on Tuberculosis before the Kearney Rotary club. His review showed a very great decrease in the number of deaths in twenty years in Nebraska and the nation.

OBSERVATIONS OF A LARYNGOLOGIST

R. C. Lynch, New Orleans (*Journal A. M. A.*, Dec. 13, 1930). relates some of his experiences in practice and makes some clinical observations: for instance, vocal nodules, either in young children or in adults, a retention cyst, and the earliest manifestation of cancer are the only tumors that grow from the free edge of the vocal cords. Fibroma, angioma and their combinations, pedunculated tumors of various types, all start on the under or the upper surface of the cord; this is also true of hemorrhagic blebs. Contact ulcers are the results of excessive abuse of the voice during acute inflammatory reaction. All other ulcers are of special etiology. A simple chronic ulcer never occurs in the larynx; its etiology must be sought for. Single pedunculated papilloma in the child is different in its behavior from the multiple type; the prognosis is better. Dissection with the aid of suspension gives the best results. The same tumor in the adult is practically always malignant. The earliest carcinoma of the larynx springs from the middle third of the vocal cord. Eight cases of metatasis to the lung have been observed in truly intrinsic cases, all discovered by accident, four substantiated by autopsy. Diathermy coagulation under suspension is of real value in properly selected cases; chloroform is used. All laryngectomies are done in one stage. Biopsy should be done only if operation is agreed to; under this plan, no evidence of harm thus far occurred. Deficiencies in diet, allergic states, endocrine unbalance and low akinetic exposure from the etiologic quadrad of sinus disease in children; any one, any combination or all four may be the fault. Infection with pathologic change may exist even when the quadrad seems normal. Malignant nasopharyngeal tumors are significant for lack of rhinologic symptoms. Salivary calculus will resemble sarcoma or mixed tumor disease. Diathermy will light up and produce progress toward increased deafness in otosclerosis. Sinus thrombosis is comparatively rare, far south. The niferior turbinate is an essential organ on the coast line, and especially far south. The wide nose of the Negro with its large turbinates will mislead the uninitiated. The greater the dilution with the white race, the less is the resistance. Allergic reactions are scarce in real Negroes, who seem less sensitive.

FEEDING OF GASTRIC TISSUE IN TREATMENT OF PERNICIOUS ANEMIA

Sixty patients who have pernicious anemia have been treated by H. Milton Conner, Rochester, Minn. (*Journal A. M. A.*, Feb. 14, 1931), with gastric tissue of swine or with tripe. Two of these were given gastric tissue of swine after virtual failure with tripe. and tripe constituted the sole form of gastric tissue given to two. Forty-six of the patients have been carefully studied under observation in a hospital. Raw and dried preparations have given approximately equivalent results. The mucosa, the remainder of the stomach after the mucosa was removed, and whole gastric wall were used separately, and each proved effective in the cases treated. The presence of muscle meat was not required to obtain rsults in the two cases treated with mucosa without muscular coat or other muscle meat. Fundus and pylorus, each used separately, produced satisfactory if not equal results. The effects on the reticulated erythrocytes, mature erythrocytes, hemoglobin and leukocytes are similar to and apparently equivalent to those obtained by feeding liver or liver extract. The effects on the general and neurologic symptoms are apparently about the same as those obtained with liver or its extract.

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CONTENTS

Page

Progress of Surgery, Herbert H. Davis, M. D., F. A. C. S. 45

Obstruction of Pylorus in Infancy, A. A. Conrad, M. D. 49

Head Injuries, Walter D. Abbott, M. D. 54

Recent Advances in Endocrinology, John F. Gardiner, M. D. 58

Unusual Retinal Vascular Changes in Traumatic Injury of the Chest. Angiopathia Retinae Traumatica. (Purtscher), Wm. H. Stokes, M. D., F. A. C. S. 60

Cleft Palate, Wm. L. Shearer, A. B., M. D., D. D. S., F. A. C. S., F. A. C. D. 66

Acquired Hemolytic Icterus, J. Harold Lynch, M. D. 71

Therapeutic Value of Autogenous Vaccines, Philip Levey, M. D. 75

Treatment of Fractures of Femoral Neck by Open Operation, John Prentiss Lord, M. D. 77

The Rules of Health, Victor E. Levine, M. D., Ph. D. 78

EDITORIAL—

Call for Annual Meeting Papers 80

Annual Dues 80

Page

"How Do You Do?" 80

DeKalb County Physicians Pay Dues 80

Aged, Indigent Physicians 80

Professor Sigerist on Medical History of the Middle Ages 81

Dermatologic Hint No. 1 81

Obstetrical and Gynecological Hint No. 1 82

Social Insurance is Contrary to the Fundamental Principles of Democratic Government 82

Convalescent Hospital and Chapel 83

Shall the Surgeon's or Pathologist's Diagnosis Stand in Appendicitis Cases? 84

Annual Meeting of American Society for Study of Arthritis 84

The Engineer and the Doctor 85

The Nebraska College of Surgeons Postgraduate Course 86

Editorial Paragraphs 86

Necrology 88

Auxiliary Notes 88

The Societies 89

Human Interest Tales 90

Book Reviews 91

PROGRESS OF SURGERY

Review of the Literature of the Last Half of 1931.

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GASTRO-INTESTINAL DISEASES

Ogilvie(1) discusses the preservation of the cecum in resection of the right half of the colon. This is not applicable to carcinoma as a more radical operation is then necessary. However, it may be done in resections for diverticulitis, stasis in the proximal colon, and dysfunction after suppurative appendicitis. He states the ileocecal sphincter is not a valve, but a real sphincter. It derives its nerve supply from the sympathetic system. The chief function of the sphincter is to prevent the ileal contents passing too rapidly into the caecum, and so allow foodstuffs to remain long enough in the ileum for digestion and absorption. The ileocecal spincter relaxes whenever a wave of peristalsis passes over the terminal coils of the ileum. As a result of the ileocecal reflex described by Hurst, active peristalsis takes place at the lower end of the ileum each time that a meal enters the stomach; the sphincter relaxes, and chyme enters the cecum. Normally the sphincter is not called upon to prevent reflux of fecal matter into the ileum, since antiperistalsis does not occur in the proximal colon unless there is some distal obstruction. When such movements occur the sphincter cannot withstand any degree of pressure on its colic surface.

Hurst believes that ileal stasis is rarely encountered except under conditions of organic obstruction at the ileocecal angle. When true ileal stasis is seen in the absence of organic obstruction it is usually due to achalasia of the ileocecal sphincter determined by a chronically infected appendix. This condition is exactly comparable to that of pyloric achalasia in duodenal ulcer. Incompetence of the sphincter does not occur as a clinically observed phenomenon.

After the ordinary operation of ileocolostomy the distal ileum dilates, contains more putrefactive bacteria and, as in this area absorption is active, after a few years the patient gets ill health with symptoms of absorption of toxins. The operation of transplantation of the ileocecal sphincter is an attempt to retain function. The immediate results of the two cases in which it was done have been very satisfactory. In performing this operation the ascending colon is mobilized, its mesentery cut near the colon after ligating the blood vessels, but care is taken not to interfere with the blood supply to the ileocecal angle and the accompanying sympathetic plexus which innervates the sphincter. The transverse colon is cut across and the ends closed. Then a diamond shaped portion of the cecal wall including the ileocecal sphincter is anastomosed to the side of the transverse colon and the ascending colon is removed. If the cecum is normal, instead of the above operation, the ascending colon may be cut away with a transverse incision through it, just distal to the ileocecal junction, and the cecum then joined to the cut transverse colon by an end-to-end anastomosis. The author uses the aseptic method of anastomosis of Pringle and Shoemaker in this latter operation.

La Roque(2) writes on a sign, first observed by Brittain in 1928, which he considers pathognomonic of gangrenous appendicitis. He found it constantly in 500 cases of gangrenous appendicitis and found it absent in more than 300 other cases with other abdominal lesion. The sign is the sudden retraction of the right testicle when pressure is made on the lower right quadrant of the abdomen. The testicle remains retracted as long as the pressure is applied and drops to its original position as soon as the pressure is withdrawn.

Estes(3) reports the results of partial cholecystectomy. This operation has a restricted field, being reserved only for those cases in whom the surgical risk of complete cholecystectomy is too great. In this operation the portion of the wall of the gallbladder which is attached to the liver, is left behind, and the remaining portion of the gallbladder is trimmed away. This procedure gives definitely better results than cholecystostomy, which is the usual operation for those bad risk patients. Of the seven cases operated by Estes by this procedure, evidence of recurrent disease in the biliary tract has appeared in but one, and in none of the cases in which the stone was impacted in the cystic duct. This operation prevents reformation or regeneration of the gallbladder and yet permits drainage as in cholecystostomy. It might, therefore, also have a field of usefulness in the rare type of secondary operation on the gallbladder in which owing to adhesions or to a liver that cannot be rotated, cholecystectomy, although indicated would be impossible.

By the experimental exclusion of all the pancreatic juice of six dogs, Elman and Hartmann(4) found that in thirteen or more days the animals developed peptic ulcers. These dogs, during this time, were kept alive and in good condition by careful feeding and the daily intraperitoneal administration of 500 cc. of Ringer's solution. These observations together with those of others point to the importance of the pancreatic juice in protecting the duodenal mucosa, most likely through its control of gastric acidity by reflux into the stomach.

Wolfer(5) found that when pancreatic juice is conveyed into the terminal end of the common duct in the dog, it can find its way into the gallbladder. After a short period of time this produces a typical pathological picture of cholecystitis which is definitely present 186 days later. By analogy it is reasoned that in the human, due to a continuous pathway between the pancreatic and bile ducts in a variable percentage of cases, it is possible for pancreatic juice to enter the gallbladder and produce pathological changes.

During a recent study by Rewbridge(6) on the reaction of the peritoneum to sterile bile, fat necrosis was frequently observed in the fat of the mesentery near the pancreas. Further investigation on dogs showed that infectious peritonitis did not result in fat necrosis. He found that the bile salts were the active agents. The presence of the pancreas is essential for the production of fat necrosis by the experimental intraperitoneal injection of bile. The liberation of the pancreatic enzymes is produced presumable by changes in permeability caused by the local action of the bile salts on the pancreas.

THORACIC SURGERY

Beck(7) considers the term "adhesive pericarditis" to be inadequate. He has proved experimentally that intrapericardial or extrapericardial adhesions in themselves may be of little or no importance in bringing about circulatory failure.

The important factor seems to be fibrosis of the pericardium, which may be either localized over the ventricles and venae cavae or generalized over the surface of the heart; the pericardium may be adherent to the thoracic wall and diaphragm or completely free from these structures. Circulatory failure, due to pericardial scar, produces the Pick syndrome.

Beck produced this experimentally in dogs by injecting Dakin's solution into the pericardial cavity. Then he cured the symptoms by the operation of pericardectomy, stripping off the thickened pericardium from the myocardium. It is important to free the left ventricle first and also, if there is pressure on the vena cava, to free this. He believes the operation should be carried out in one stage. He describes a new method for the control of bleeding from the heart consisting in placing a suture in the myocardium and tying it loosely over a small graft of muscle. The operation should be done in a negative chamber to eliminate the hazard of pneumocardiac tamponade. This term indicates the effect of atmospheric pressure on the heart and on the great vessels at the base of the heart. This alteration greatly impedes the venous return to the heart and may be the cause of circulatory failure in operations within the thoracic cavity.

Van Allen and Lindskog showed that the lobular divisions of the pulmonary air passages in dogs are connected collaterally, rather than being independent as generally supposed. The communication comes spontaneously into use when the bronchi supplying one lobule or a group of lobules become obstructed. Then the obstructed part breathes from the side through the adjacent free parts of the lobe. No such connection exists between the lobes.

After considerable experimental work, Van Allen and Jung(8) showed that factors which reduce the efficiency of collateral respiration must be considered in understanding the production of postoperative atelectasis. Descent of the diaphragm is almost entirely responsible for the expansion of the lower lobes of the lungs. Therefore, loss of motion of the diaphragm is more deleterious to the efficiency of collateral respiration of the lung bases than loss of costal motion.

GYNECOLOGY

Novak and Hurd(9) report the results of treatment of 51 cases of functional uterine hemorrhage by an anterior pituitary luteinizing principle derived from the urine of pregnant women. Practically all investigators of this question agree that the anterior lobe of the pituitary gland produces two hormones, one of which is concerned with follicle growth and ripening and the other with the process of luteinization. Of course, there are other hormones produced by the anterior lobe, but with these we are not concerned in this discussion. The function of the anterior lobe is greatly increased with pregnancy. Zondek was able to separate the pituitary hormones in aqueous solution from the urine of pregnant women, giving this watery extract the name of "prolan." Of the five anterior pituitary hormones which have been described, at least three are contained in Zondek's prolan. These are the follicle-stimulating hormone, or prolan A, the luteinizing hormone, or prolan B, and the metabolic hormone. The growth hormone alone is absent. The two important hormonal principles, prolan A and prolan B, cannot as yet be readily separated. The dominent action of the urine in pregnancy, especially in the earlier stages, is that characteristic of prolan B, i.e., luteinization.

In functional uterine hemorrhage there is a persistence of the unruptured graafian follicle of the ovary and an absence of corpora lutea. Therefore, the authors have been using prolan B, prepared by Parke, Davis and Company, intravenously in 51 of these cases. In 14 of the 51 cases the bleeding has ceased after a single injection, and in 12 after two injections. With strongly luteinizing preparations they were able to check functional hemorrhages in 27 of 29 cases. A large proportion of these cases were of the intractable and recurrent type, many having had from one to four curettements. With less potent luteinizing preparations, the results have been less impressive, but on the whole satisfactory.

It has long been known that hemophilia exists only in males, while it is transmitted through the female. If the female can transmit the disease she must potentially have the disease and there must be something in the female organism which holds the disease in abeyance. Reasoning on this hypothesis, Birch(10) treated two cases of high grade hemophilia by ovarian therapy and ovarian transplant with excellent results. It has been definitely established that the female sex hormone can be isolated from the urine of normal males. The author tested the urine of seven men with hemophilia and found it deficient in the female sex hormone. Also the urine of two transmitters was deficient in this hormone.

BONES AND JOINTS

At the direction of Burman(11) an instrument was devised for the direct visualization of joints. After making this arthroscope he found that Bircher had done a similar work in 1922. The arthroscope of Burman consists of a telescope and a trocar of four millimeters diameter. This is inserted into the joint which is then examined by direct vision. To do this the joint is distended by a non-irritant fluid or gas. Fat is the greatest obstacle to good vision and therefore the distending agent must be strong enough to push the fat away from the things to be seen. To separate joint surfaces, so that a greater space results, traction is necessary. The position of the joint is important and at times it is also advisable to observe the joint in motion. Puncture of the joint must be done carefully so that the structures, especially cartilage, are not damaged unnecessarily. He discusses the arthroscopy of the various joints individually.

At the suggestion of Dr. Schmorl, dyes were investigated as an aid to arthroscopy. They found that selective staining of cartilage by certain dyes were of value in delimiting in color areas of necrosis or damage. Eosin for example, would not stain normal cartilage, but would stain diseased cartilage. He has tried eosin, hematoxylin, gentian violet, methyl violet, neutral red and many other dyes. Thus far it seems that only eosin and neutral red show the desired selectivity.

Arthroscopy is indicated for diagnosis in place of exploratory operation, also in cases of joint disease, the diagnosis of which may be in question, and in which an exploratory operation is not contemplated. It should also be done before reoperating on a joint for a possible relapse of its original condition. Biopsy specimens may be secured by an operative attachment to the arthroscope. Large bands of adhesions may also be cut by the operating arthroscope. It provides an excellent means of observation in studies of experimental joint physiology and pathology. Clinically, it may be used in the diagnosis of arthritis, diseases of synovia or of fat pads, intra-articular fractures foreign bodies or free bodies, injuries to the menisci or crucial ligaments of the knee, intra-articular tumors, tuberculosis and other granulomata, etc. Therapeutically, ultra-violet light for internal irradiation of the joint cavity may be used through it in the treatment of joint diseases.

NEUROLOGY

Similar to his work on arthroscopy, Burman(12) used a like instrument for direct visualization of the spinal canal and its contents. This is much more difficult than with joints, due to the narrow width of the canal. This method cannot be used on the living patient, but may be used in checking up a diagnosis post-mortem in a case in which the spine can not be removed. It has practical application only in the region of the canda equina. The method may be called myeloscopy.

MISCELLANEOUS

Including his own case, Silverman(13) finds that there have been twenty cases reported in the literature of pulmonary embolism following the injection treatment of varicose veins. Of these, 15 were fatal and 5 recovered. There were hundreds of thousands of cases injected which makes the percentage of cases developing pulmonary embolism very small. In many of the cases developing these complications too large volumes of the sclerosing solution were injected. Linser, long ago, warned against using sodium chloride in quantities over 5 to 10 cc. at one time. Sicard did the same for sodium salicylate. Genevrier advised 2 cc. as the maximal dose for quinine and urethane.

Based on the hypothesis that in cancer cases the anterior pituitary was overactive and the posterior pituitary underactive, Susman(14) treated two cases of advanced cancer with pituitrin alone, and five cases with pituitrin and theelin. An epithelioma began to separate off and was enucleated after seven weeks of this treatment. The growing edge disappeared in five days. All the cases showed regressive changes in the tumors and life appeared to be definitely prolonged.

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OBSTRUCTION OF PYLORUS IN INFANCY*

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Evidently there are two distinct conditions which produce obstruction at the pylorus in infants, one hypertrophy of the circular muscle of the pyloris, the other a spasm.

Much confusion has existed, and still exists, as to the identity of pylorospasm. Cases occurring in early infancy have not always been separated from hypertrophic pyloric stenosis, until coming to operation when no tumor or obstruction could be found.

Various terms have been applied to the two conditions in an effort to secure a definite nomenclature and to separate them into two definite clinical entities. To me it seems immaterial whether we call one the hypertrophic pyloric stenosis and the other pylorospasm, "vagatonia", "gastro-enterospasm" or "hypertonic diathesis". We have two conditions, either one or both of which produce on the whole, similar symptoms. The important thing is to recognize that an infant having forceful, so-called projectile vomiting, after several or all feedings each day, is more than likely suffering from one or the other of these conditions. The nefarious practice of attributing such vomiting to the mother's milk and fishing around for a food that will stay down, even to the point of securing goat's milk, is jeopardizing the life of the infant and raising the operative mortality.

HISTORY

Probably the first cases of hypertrophic pyloric stenosis ever reported were those of George Armstrong in England in 1777, under the title of "Spasm of the Pyloris" and Hezekiah Beardsley in Connecticut in 1778, under the subject of "Case of Scirrhus of the Pyloris in an Infant". The clinical symptoms and pathological findings were well described by Hirschsprung in 1888 and by Ibrahin in 1905 and later. Since then the literature has been full of reported cases and series of cases and the treatment, both medical and surgical, has been highly developed.

ETIOLOGY OF HYPERTROPHIC STENOSIS

It is common that the disease is undiagnosed because of the custom of ascribing vomiting in early infancy to a child's supposed lack of tolerance for breast milk. The history of the disturbance will here be of value. It is usual for the mother to emphasize the fact of the vigor and satisfactory nursing of the infant during the first days and weeks of life, when suddenly without apparent reason, a whole feeding will be forcibly ejected and the vomiting became a constant occurence. No influence of the breast milk per se can be assigned to the development of the hypertrophied pyloris. The fact that breast milk is being regularly vomited and in a forcible manner, should at once suggest pyloric obstruction.

Hirshsprung regarded the disease as primarily a muscular hypertrophy. An hypertrophic pyloris has been found in a foetus. He concluded that the tumor must have been primary, as a spasm of the pylorus would be improbable in foetal life. If the growth were always congenital the freedom from symptoms during the early weeks of life would be explained only on the basis of incomplete obstruction during that period, with final enlargement of the musculature to the point of causing symptoms. Others have offered the explanation that superimposed upon the primary hypertrophy there is a secondary spastic contraction of the muscular coat, which in certain cases relaxes at times so that food will pass. Pfaundler's theory was that the spasm is primary and that the thickening is compensatory from the narrowing of the pyloric canal. Heubner ascribes the development of obstruction to a pre-existing spasm of the entire stomach wall. Numerous observations have shown that the hypertrophy persists for months after spontaneous cure of the vomiting.

It is evident from the previous brief outline of theories advanced, that no explanation is as yet convincing. We are left to the conclusion that in the early weeks of life, there is a predisposition to the development of hypertrophy of the pylorus and that the vomiting and other symptoms are caused by obstruction of the pyloric canal.

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*Read before Seventh Councilor District Medical Society meeting, October 26, 1930.

ETIOLOGY OF PYLOROSPASM

No extensive literature exists in which pylorospasm is adequately treated from its etiological and pathological characteristics. Much of a controversial nature, however, has been printed in which some writers doubt the existence of such a clinical entity, other writers believing that it is an earlier stage of true pyloric stenosis; and others believe that any case successfully treated by medical or dietary measures proves the absence of hypertrophic stenosis and the presence of spasm.

It is improbable that spasm would affect the pylorus alone. There is at operation no malformation of the pylorus, and the disease is not, therefore, one for surgical intervention. The entire gastro-intestinal tract is involved in the increase of nerve tone and producing, likewise, general hyperirritability. The theory, as supported by White, is that there is a lack of balance between the stimulating action of the vagus system and the inhibiting action of the sympathetic nervous system. Reyher is of the opinion that spasm of intermittant character does occur and effects the oesophagus, stomach and intestines in children who have increased vagus tonus or increased excitability of the vegetative nervous system. The underlying cause is not understood. A familial tendancy as regards other children or the parents is frequently found in the history.

PHYSIOLOGY AND PATHOLOGY OF HYPERTROPHIC STENOSIS

There is a marked increase in the peristaltic function of the stomach. According to Alverez, reversed peristalsis is present in hypertrophic pyloric stenosis. Toxemia may be a secondary factor in the production of vomiting.

The stomach is greatly dilated, its walls thickened. The pyloric tumor is made up of greatly thickened circular muscle cells, but there is no increase in the connective tissue fibers. In gross appearance the tumor resembles hyaline tissue. After operation with division of the circular fibers, Wollstein found that the wound healed in about two weeks. Early healing is brought about by the growth of the serous and submucous layers. Two years later there is only a connective tissue line to mark the site of the wound.

PHYSIOLOGY AND PATHOLOGY OF PYLOROSPASM

The vomiting is due to the gastric spasm. It is probable that the stomach and duodenum become somewhat dilated. Evidence of tissue changes are wanting. The entire gastro-intestinal musculature is involved in the spasm. Observation during operation furnishes the only available information, as these infants do not die or come to autopsy. Only in severe cases do intoxication, dehydration or wasting occur.

SYMPTOMS—HYPERTROPHIC TYPE

Vomiting is the chief and first symptom. Stenosis is found in the breast fed infant usually with a previous history of normal digestion and development. Vomiting suddenly begins at the age of from one to six weeks, seldom later. Boys are more frequently affected than girls. In a series of 52 cases, Herz found 8 among girls.

The infant does not vomit repeatedly between feedings, but usually once after each nursing, or several meals may accumulate and then be expelled by forceful or projectile vomiting.

In the beginning, the child does not seem acutely ill; there is little or no elevation of temperature, appetite is usually good or even increased. At this time of life, projectile vomiting is due to an obstructive lesion, be it hypertrophy or spasm. Gastric intolerance in a previously normal infant, without evidence of an overfeeding or of intestinal indigestion furnishes one of the outstanding symptoms. Due to the accumulation of mucous and the retention of considerable portions of previous feedings, the amount vomited may be greater than the amount just taken.

The child has a peculiar form of constipation. The stool contains little fecal material, is small in amount and consists mostly of mucous. There may be one or two such small movements or a day may elapse without any stool.

The urine is scanty, because of deficient absorption of foods and liquids. Acetone and diacetic acid may be present.

Another important symptom is hyperperistalsis, if you can see it. These waves pass from below the left costal arch to the right and stop at the pyloric end near the right mammary line. The wave begins spontaneously, or may be brought on by tapping the abdominal wall over the cardiac end of the stomach. At times, the entire outline of the stomach may be observed in a thin infant, giving a full appearance to the abdomen above the umbilicus, which is in contrast to the flat or sunken lower abdominal area.

The pyloric tumor may be felt, if of sufficient thickness or hardness. Some men go so far as to say it can always be felt and that unless it can be felt, a diagnosis of stenosis should not be made. The position of the tumor is just to the right of the mid-abdominal line and above the level of the navel. As the disease progresses, the tumor enlarges.

Loss of weight is a symptom, as well as a prognostic feature. Complete obstruction at the pylorus means a rapid and marked emaciation. If the infant has lost ⅓ of its body weight, the case has been one of marked severity and the outlook is not favorable. It is usual for the child to lose 1 to 2 oz. daily. In some cases there may be remissions in the pyloric symptoms with utilization of some of the food. The weight may then remain constant or temporarily show an increase. Most cases have no elevation of temperature. The mouth may become dry and the lips red. So far as is known, the infant suffers no pain.

SYMPTOMS OF PYLOROSPASM

Again vomiting is a chief symptom, also crying and wakefulness. The infant may cry during nursing or thereafter and seem definitely uncomfortable.

There are visable gastric and intestinal patterns due to hyperperistalsis, but no true peristaltic wave of the stomach alone.

The vomiting may appear at the same age as that of pyloric stenosis, but not so soon after feeding. It may be a simple regurgiation or of the mild projectile type. There are periods of remission when there is no vomiting. The emptying time of the stomach may be delayed, but there is no constant pyloric obstruction.

The stools may be undigested and loose, normal or constipated. They vary in the same infant.

The nutrition is not markedly disturbed. Usually the weight remains stationary for weeks, or during remissions gain is normal.

DIAGNOSIS AND DIFFERENTIATION

Dietary indiscretions of the mother and colic in the infant, may be blamed for the digestive upset. A catheter passed into the stomach four hours after a feeding, will recover a large amount of residue in the stomach in case of stenosis, even though the infant has vomited. This may exceed the amount taken at the last meal.

X-ray will be of value in doubtful cases. Unless there is obstruction, the first of the barium meal will begin at once to enter the duodenum, at the end of four hours most of the barium should be in the intestines. This failure of the barium to enter the pylorus may occur in spasm.

Vomiting from too frequent or too large feedings is entirely different in type from the projectile expulsion of food. It is corrected by lengthening the intervals between feedings and shortening the time at the breast. The colicky or hypertonic infant may have irregular vomiting, not occurring so promptly after nursing and not accompanied by a steady loss of weight. In fact, such infants may at times gain sudden large amounts and may be well nourished. Such an infant has intolerant crying and has a history both personal and family, of neuropathic diathesis. So far as medical therapy is concerned, the so-called pylorospasm need not be differentiated from true hypertrophic stenosis. No tumor will be felt and the obstruction will be intermittant. It is amenable to sufficient doses of atropine and to the feeding of thick cereals.

Toxic vomiting from infections within or outside the intestinal tract has an absence of obstructive symptoms. Projectile vomiting is a symptom of brain tumor and especially of tuberculous meningitis, almost unknown in the early weeks of life. Here the vomiting is not constant and has no reference to meals. Constipation is present also, but the stools are not small and are not of the starvation type. Appendicitis is rare at this age, but should be considered; an acute course, initial vomiting, pain, tenderness, abdominal distention, leucocytosis, fever and a mass, if any, felt low in the abdomen.

Low intestinal obstruction, due to congenital atresia and other malformations shows an obstruction to the opaque meal at these lower levels. When duodenal atresia is present, the barium may pass the pyloris, but will stop in the blind end of the intestine. Intussusception occurs at a somewhat later age than pyloric stenosis and is characterized by acute vomiting, bloody stools and a sausage shaped tumor in the lower abdomen.

When persistant vomiting occurs in the infant soon after birth, especially in the first few days, one should bear in mind the possibility of a congenital obstruction elsewhere than in the pylorus. One of these is the above mentioned atresia of the duodenum. Another cause of prompt vomiting is atresia or deformity of the oesophagus. Vomiting of all fluids beginning with the first feeding of water and inability to pass a 12 to 14 F. catheter should confirm this diagnosis.

TREATMENT OF HYPERTROPHIC STENOSIS

The question of medical versus surgical treatment is one in which opinion differs. Johannessen of Denmark is opposed to surgery. He uses atropin in large doses and states that the effect may not be attained until the tenth to fourteenth day of treatment. Herz, of Germany, recently reported fifty-two cases, not operated upon, none of whom died of obstruction and half of whom were cured without any drugs. His report is not in accord with those observers who insist on a pyloric tumor and persistant obstruction as the basis for treatment.

The British profession is generally in favor of immediate operation when the diagnosis is complete. When the mother has plenty of milk, still insists that operation should be done at once, so as to interrupt the breast feedings only on the day of operation. Ashby and Southam favor the surgical method if done by an experienced operator.

In America the consensus of opinion seems to be that the type of therapy should be based on the amount of obstruction, the welfare of the child and the urgency of prompt relief. While in the hands of experienced clinicians the medical or dietary treatment has usually given good results, it is recognized that there is a need for surgery in definite cases.

Treatment begun in the early days of vomiting permits of much difference from that begun later. When there is a portion of the food passing the pylorus, the nutrition fairly good and little evidence of toxemia, it is safe to try non-surgical methods.

Stomach washing is indicated early in the course and should be kept up as long as any benefit is derived. It empties the stomach of residual debris and renders the passage of food easier when obstruction is not complete.

DIETARY

At first the interval between feedings should be four hours. The time at the breast is limited to five minutes or less. If no reduction in vomiting occurs, thick cereal cooked with water for one hour, ½ to 1 oz. is fed by a spoon immediately after a breast feeding of a few minutes, or a breast feeding may be alternated with a gruel feeding. The breast milk may be expressed and mixed with the gruel. Skim milk may be cooked with the cereal if breast milk is unavailable.

Thick feeding should be begun in every case, as it lowers the tendency to vomit, whether the treatment be medical or surgical. Cereal alone is unsuited for long-continued administration and should be alternated with some milk containing nourishment.

Grulee has warned against the danger of water starvation of infants fed solely on concentrated foods. Water may be given two hours after the thick food with the expectation that some of it will be utilized.

To Sauer belongs the credit for much of the improvement in dietary methods. His directions for preparing and feeding cereal concentrations are briefly as follows:

Farina, or rice flour	6 Tbsp.
Skim Milk	9 Oz.
Water	12 Oz.
Dextrimaltose	3 Oz.

Cook for one hour in a double boiler until the food is quite thick or pasty. Give two to four teaspoonsful every three hours during the day and twice during the night by spoon or wooden tongue blade.

The German literature reports a record of three infants dying from asphyxia resulting from respiratory aspiration of vomited thick gruel. At autopsy, cereal was found in the fine bronchioles. American records at my disposal give no such records.

MEDICAL TREATMENT

Due to the ability of atropin to reduce hypertonicity and spasm of unstriated muscle, it is commonly used. One drop of a 1:1000, approximately ¼ gr. to ½ oz. distilled water, is the usual initial dose, increasing to physiological effect. It is not considered safe to go beyond 1:250 gr. per dose.

While atropin is not a specific it should be given a fair trial along with dietary treatment as long as there is improvement.

SURGICAL TREATMENT

This is not within the scope of this paper, though I do wish to say that a case, in which a tumor can be felt, which is losing weight and vomiting nearly all food should have the benefit of surgery before it is too far gone to benefit by it.

The Rammstedt operation in which the hypertrophied pyloric muscle is cut along the longitudinal axis of the pylorus seems to be the choice of methods.

TREATMENT OF PYLOROSPASM

The infant should be kept undisturbed as much as possible and feedings reduced to five in twenty-four hours. The vomiting, constipation, crying and sleeplessness are sometimes benefited by replacing one or two breast feedings with buttermilk. The buttermilk is to be mixed with an equal amount of thick cereal and fed with a spoon. A few spoonfuls may also be given after each nursing.

In this condition, atropin in sufficient dosage is practically a specific. As in hypertrophic stenosis, the 1 to 1000 solution is used, starting with one drop fifteen minutes before feeding and increasing to physiological effect. Atropin deteriorates and as the end of the bottle is neared, eight to ten drops or more may be required to obtain dilatation of the pupil. When a new supply is secured, it is well to again use one drop doses the first day and increase to physiological effect. Continued administration is necessary to keep the child comfortable and free of vomiting. After a few weeks of relief, the drug may be stopped to be again begun if symptoms return. Excitable members of the family should not handle the child and if the mother is nervous and worn out, she should be relieved of the care of it.

It seems that the difference between hypertrophic stenosis and pylorospasm is chiefly in degree. Atropin and thick feedings will cure the latter and may help the former.

REPORT OF A CASE

At present we are treating a girl baby, now 4½ weeks old, who on its second day of life developed projectile vomiting with vomit coming through both mouth and nose, cyanosis, crying, tetanoid attacks and constipation. She was at once put on atropin and showed slight improvement, but the mother was opposed to atropin, because of an idiosyncrasy for the drug on her part and did not give it regularly and results were not gratifying. X-ray showed obstruction at the cardia as well as pylorus and there was doubt as to whether she had a stenosis at the pylorus with spasm of the cardia, or if both were spasm or if she had a stricture at the cardiac opening. Atropin and luminal 1/16 gr. relaxed both openings and the barium passed. The baby is gaining fairly well and when not in the house with three other children, is comfortable and does not vomit, as long as she gets atropin. When there is much commotion about the house, she vomits some, in spite of atropin, cries a good deal and is anything but a good baby.

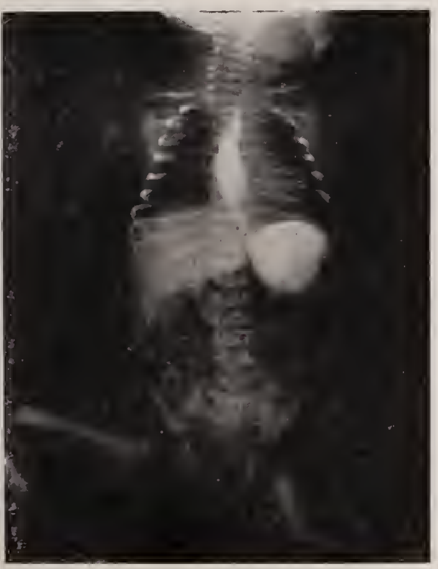

Fig. I. Before hospitalization immediately after meal.

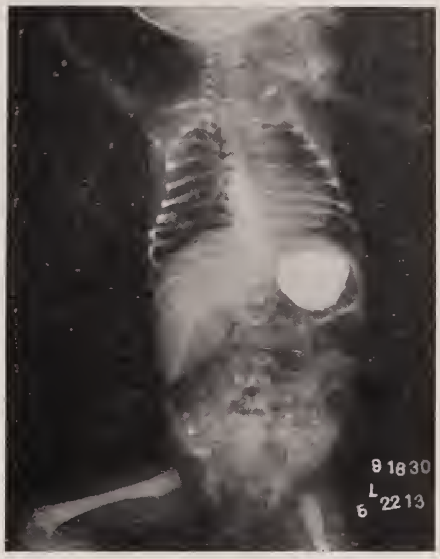

Fig. II. Before hospitalization, 6 hours after meal.

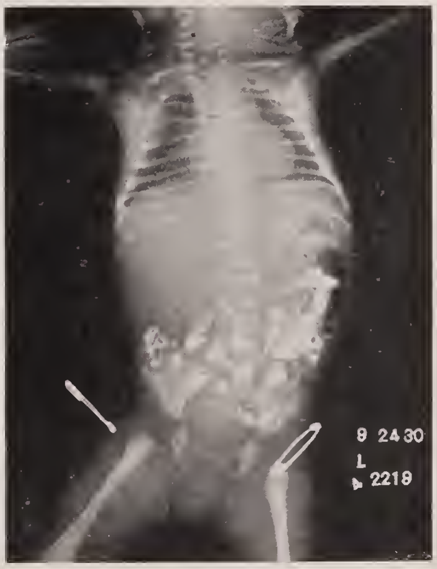

Fig. III. After hospitalization, 3 hours after meals.

(Later. Since the opportunity has come of adding a supplementary report on this baby, it may be interesting to learn that when two months old she developed a severe pneumonia with prolonged periods of apnea and cyanosis. She survived, but was very emaciated. After her recovery from the pneumonia, her weight was the same as at birth, eight pounds. In three weeks, she gained 12 oz. Until she was four months old she had had periodic explosive vomiting. When the mother became optomistic and stopped atropin for a few days, vomiting returned, but was promptly controlled by a return to sufficient atropin dosage. When five months of age, the baby weighed 12 pounds and 2 oz. having gained 2 pounds 12 oz. in seven weeks. She had had no atropin for four weeks and had not vomited.

At this time she is almost seven months old and is in good physical condition, weight 14 pounds 3½ oz., having gained 2 pounds 1½ oz. (33½ oz.) in 6 weeks.

Pylorospasm or a hypertonic condition of the intestinal tract is not an uncommon affection and will be the cause of many unpleasant days and sleepless nights for both mother, father and baby and often the doctor.

HEAD INJURIES

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The present day trend of living is dependent upon two attributes, speed and efficiency, both of which cost dearly, often to the extent of loss of life.

Speed, in itself, is largely responsible for an increasing number of injuries whether this be in the air, on the highway or in industry. Although the care of injuries is the oldest form of the art of healing we have failed to progress in keeping with other advances in science. No longer can the accident case be relegated to the intern or resident physician, for today the responsibilities entailed in the adequate management of such injuries demand the attention of a trained observer.

Traumatotherapy has become a specialty and in many instances an accurate plan of treatment is carried out.

Not so in head injuries for we are confronted with innumerable warnings, classifications, modes of treatment and general discussions to the extent that we have failed to observe our second maxim, efficiency. To fulfill this demand a detailed plan of treatment is indicated, and an effort will be made to present a program which has been effective in reducing the appalling mortality associated with these cases.

CLASSIFICATION

Skull fractures in themselves are seldom fatal but death is caused by hemorrhage or brain damage. While it is possible for a spicule of bone to damage a vital center and I have seen one case in which a comminuted fracture of the arch of the foramen magnum severed the medulla, our chief concern is in the preservation of the cerebral function. Numerous classifications have been offered and although comprehensive they have seemed unwieldy. A simple grouping of all head injuries under four types has sufficed to keep us from confusion.

All cases of head injuries which have been momentarily unconscious or dazed are included under the following classification:

1. Massive brain damage.
2. Skull fractures and scalp lacerations.
   (a) Without evidence of localized brain damage.
   (b) With evidence of localized brain damage.
3. Cerebral concussion.
4. Middle meningeal hemorrhage.

1. Massive brain damage is hopeless and little more than palliative methods can be employed. Drastic surgery is contraindicated because it is of no avail. This group of cases usually die within the first six hours after admission and consist of extensive compound fractures with marked lacerations of the brain.

2. Skull fractures and scalp lacerations. (a) without evidence of localized brain damage. A large number of head injuries have scalp lacerations of varying degrees which may or may not be associated with fracture. Debridement is the procedure of choice in the management of compound fractures or extensive scalp lacerations, however, too much effort directed toward a cosmetic result is contraindicated because these patients need rest and treatment for shock. The details of the care in this group will be discussed under the general type of treatment.

(b) With evidence of localized brain damage. This group of cases consists of perforating fractures, depressed fractures and linear fractures with underlying hemorrhage.

The progress of neurologic surgery in recent years has clearly demonstrated the fallacy of considering this type of head injuries as hopeless.

3. Cerebral concussion. Many patients who are only unconscious for a few minutes are dismissed casually as minor injuries and much to

the chagrin of the indifferent physician he learns that the patient died a few hours later. It is our custom to hospitalize every patient, who has been unconscious, for at least twenty-four hours so that we will not be guilty of such neglect.

Adson believes that coma in head injuries is due to a sudden dissociation between the cerebral axons and dendrites. I feel that this phenomenon of concussion is caused by petechial hemorrhage or edema which can interrupt the association of nervous impulses between axons and dendrites. Coma may be associated with fracture but if so is classified in group two.

4. Middle meningeal hemorrhage. This condition presents a most classical picture and is one of the few head injuries that requires emergency surgery. However urgent operation may seem, we must not lose sight of the patient's general condition and his chances for surviving the added shock of surgical interference. The syndrome of middle meningeal hemorrhage consists of coma, usually a lucid interval, followed by unconsciousness, convulsions or paralysis of the contralateral extremities and lower half of the face on the opposite side.

TREATMENT

The reduction of the terrific mortality of head injuries in recent years has been due to a better understanding of physiology, water metabolism and less tendency to hurriedly operate.

All patients suffering from cranio-cerebral trauma are in a state of shock and should be treated as such primarily. It is our custom to place these patients in a warm bed, ice bags to the head, take blood pressure, pulse, temperature and respiration every fifteen minutes and only temporarily staunch bleeding from lacerated wounds. It is obvious that antiseptics should be applied to all wounds but no time should be lost while the resident practices suturing upon an unconscious patient.

The chief element of danger in head injuries is the development of cerebral edema and our efforts should be directed toward the prevention of this complication while treatment is instituted for shock. No time can be lost on x-ray or detailed neurologic examination for these are of little help in preventing the inevitable rise in intracranial pressure.

Atropin has proved valuable in the preservation of fluid in the body and in stimulation of the vasomotor bed to increase diastolic pressure. Kennedy and Wortis' observation on caffeine as a general stimulant and reducer of intracranial pressure has been valuable, but this drug has such a violent action that its results are often fleeting.

While it is true that the proper volume of blood is necessary to the maintenance of life, in the presence of shock, large amounts of fluid given intravenously or subcutaneously will only hasten the oncoming cerebral edema. Weed has shown that normal saline solution given intravenously produces a rapid increase in the production of cerebrospinal fluid. Thus we must utilize the fluids in the body to supply the demand for proper blood volume without adding extra burdens, so we are indebted to Howe and Peet for the introduction of hypertonic glucose. Every adult is given 50 cc. of 50% glucose intravenously to serve the purpose of withdrawing fluids from the interstitial spaces to add blood volume and prevent the additional production of cerebro spinal fluid. In cases where there has been severe hemorrhage and there is an acute need for an increased blood volume we have used 100 cc. of 6% gum acacia in 20% glucose (conveniently put up in 300 cc. ampoules by Squibb). Glucose may be given every four hours if needed and indicated by the pulse rate. A careful study of pulse, temperature, respiration and blood pressure will determine the degree of shock and indications for further steps in the management of the case.

Shock is evident when the body surface is cold and clammy, temperature below normal, and pulse over 120. We consider the patient in shock until the temperature has risen to normal. The persistence of a rapid pulse may mean a paralysis of the vagal center, hemorrhage or a demand for increased blood volume. A pulse rate over 120 per minute is considered as a demand for increased fluid volume and is usually seen in shock. A persistent pulse rate over 120 cannot be ignored and is best dealt with by the administration of hypertonic glucose every few hours if necessary. A pulse rate below 70 is indicative of increased intracranial pressure, irritation of the vagal center, cerebral edema, or middle meningeal hemorrhage and warrants the closest observation to detect the cause. Thus it is essential to record the pulse rate every fifteen minutes for the first twenty-four or forty-eight hours. As soon as the patient has recovered from shock a spinal puncture must be done to determine the degree of intracranial pressure, existence of subarachnoid or ventricular hemorrhage and to temporarily reduce the burden on the cerebral circulation. It is necessary to estimate the pressure with a manometer and be guided by this pressure in removing cerebro spinal fluid. While there is still some feeling that spinal puncture is dangerous I do not feel that any serious complications will arise if a careful estimation of pressure is made. The only cases in which there is danger of herniation of the medulla are those in which there is a rapid drop in cerebrospinal fluid pressure, and in these instances it is preferable to remove small amounts of fluid frequently rather than attempt an extensive drainage.

Winkleman and Fay have demonstrated the neurolytic effect of blood on brain tissue and the pressure damage produced by clotted blood clogging the subarachnoid villi and pachioniam bodies. Thus bloody spinal fluid must be removed in keeping with pressure limitations, and our practice is to drain until the pressure drops to 10 cm. of water. Often spinal drainage coupled with dehydration will suffice to decompress an edematous brain rather than the old "emergency" decompression with its needless mortality. The indication for repeated spinal drainage at four or eight-hour intervals are rise in temperature, pulse below 68, respiration above 40 or below 16 and lapse into coma. Careful recording of temperature readings at fifteen minute intervals will determine the recovery from shock or evidence of cerebral damage. A rise in temperature over 101° indicates a change in the heat regulating centers and must be observed with great respect. An increased rise in temperature may be the forerunner of medullary compression, hyperthermia and death.

Transitory disturbances in temperature should cause no concern but a rise over 102 must be met with ice packs, cold towels to the body and spinal drainage. I have seen temperature fall eight degrees after a spinal drainage, and am firmly convinced that the release of spinal fluid, particularly bloody fluid, has been a life saving means in a number of cases.

The respiratory rate is a reliable barometer of vital functions and often is a forewarner of medullary compression and death. A respiratory rate over 40 indicates a marked cerebral disturbance and permits rapid loss of carbon dioxide which produces alkalosis and edema. Often apparently hopeless cases have been allowed to rebreathe their own carbon dioxide with a small amount of oxygen and have recovered, because this has stimulated deeper respiration with a resulting balance of this mechanism. A simple forming of a cone with a wet towel placed over the patient's nose and mouth with a small oxygen tube led in will be satisfactory for this purpose.

A respiratory rate of 16 or below indicates a marked increase in intracranial pressure and is significant of either hemorrhage, gross cerebral edema or medullary compression. Our great concern in all serious head injuries is the prevention of respiratory failure, thus morphine must never be given because of the depressing effect. Most patients can be quieted with bromides, chloral or codeine and even sodium amytal is preferable to morphine.

The blood pressure readings are an indication of the efficiency of the vascular system and as such are valuable. The systolic pressure represents the force of the heart against peripheral resistance and there is little cause for concern when maintained above 85 or below 175. The diastolic pressure represents the tone of the peripheral vascular bed and is the veritable index of life itself. Below 60 mm. of mercury there is a rapid loss of oxygen from the blood, thus it is evident that every effort must be directed to keep the cells supplied with proper nutrition. A careful recording of systolic and diastolic pressures will give the pulse pressure which will indicate the probable outcome of each case. A rising pulse pressure usually signifies a falling diastolic pressure and failure of the systolic to compensate. This means anoxemia, alkalosis, edema and tissue death. Hypertonic glucose must be given to increase blood volume and raise both pressures.

Temple Fay has aptly expressed the crucial stage of many head injuries by saying: "The old adage. if pulse pressure crosses the pulse rate that is the time to decompress" has now been supplanted by the more modern method which may be substituted in this statement. *"When the pulse pressure crosses the pulse rate, that is the time to dehydrate"*.

Dehydration consists of attempts to relieve intracranial pressure and disturbed water metabolism without adding further burdens to the vascular system. Cerebral edema and middle meningeal hemorrhage are the chief causes of rapidly increasing intracranial pressure with a subsequent vasomotor failure. Magnesium sulphate is an effective dehydrating agent but it should never be used while the patient is in shock because this drug depletes the blood stream too rapidly. However after recovery from shock a marked reduction of cerebral edema can be obtained by giving three ounces of magnesium sulphate in four ounces of water as a retention enema. This may be repeated every four hours if indicated by a fall in pulse rate or respiration and a rise in pulse pressure.

Fluids should be limited to twenty ounces per day for the first ten days after a severe head injury, and then the intake must be kept below forty ounces for at least six weeks to prevent complications as a result of secondary cerebral edema.

When the patient has recovered from shock a careful neurologic, opthalmoscopic and x-ray examination should be made. It is important to differentiate between stupor and aphasia. If a right handed patient has been injured in the Sylvian area he may appear stuporous when he is only unable to speak. Pressure in the supraorbital notch in an aphasic patient will result in a definite attempt to remove the examiner's finger, whereas a stuporous patient's response will be a purposeless effort to remove the painful impulse. This sign is followed by a facial contraction on the same side with a reflex motion of the homolateral arm and often it is a valuable means of determining the presence of paralysis. Often a hematoma of the scalp will appear on palpation to cover a depressed fracture and care must be taken not to err in this diagnosis without the support of the x-ray.

The testing of reflexes is highly important, especially the Hoffman reflex. This consists of snapping the middle fingernail with the hand in mid pronation. If there is an approximation of the index finger and thumb it can be concluded that there is an involvement of the hand center on the opposite side. The Hoffman and Babinski reflexes are extremely valuable in corroborating the suspicion of an upper motor neurone lesion in the arm or leg center.

Exaggerated reflexes followed by paralysis of an extremity signify a progressive lesion, probably a hemorrhage.

Close observation of the patient will usually determine the urgency of operation and it is gratifying to note the effect of dehydration in reducing the number of operative indications.

Compound fractures, middle meningeal hemorrhages and depressed fractures are the only cases demanding surgery, and none of these patients should be operated until they have recovered from shock.

Scalp lacerations and hematomata should be cared for after the patient's general condition warrants this procedure. Debridement is the only satisfactory means of handling extensive lacerations, and care must be taken that the wound is never swabbed out for this will only add infection from the outside. It is preferable to gently irrigate the lacerated wounds with a germicide such as iodine. It is obvious that antitetanic serum be given in these cases and it is well to insert a drain for twenty-four hours.

In a previous paper I have emphasized the danger of meddlesome interference with bleeding aural and nasal canals. These conditions should be left alone instead of cleaning out blood clots and pouring in antiseptics for the danger of carrying infection in outweighs any possible good obtained from oversolicitous meddling.

Cases in which there is evidence of localized hemorrhage (either middle meningeal or venous) should be explored, the clot removed by gentle washing with saline and the offending vessel ligated.

Many authorities decry the practice of elevating depressed fractures but I agree with Bunten in the belief that the surgical procedure is of so little risk compared to the chances of post traumatic epilepsy that this should be done when the patient is safely out of shock.

It is interesting to note the conservative trend in operative indications in the past fifteen years, as statistics show a drop from 30 per cent in 1916 to 4 per cent in 1930. Thus it is obvious that the emergency decompression is becoming obsolete in deference to the newer means of dehydration.

COMPLICATIONS

Osteomyelitis is a dreaded complication in any compound fracture and too frequently this condition occurs in skull injuries. It has been my practice to remove the infected area in a block well beyond the margin of healthy bone. I feel this is a more logical procedure than attacking the center of the lesion and removing the infected tissue until healthy bone is reached. After a period of six or eight months it is safe to cover the defect with a sliding graft of the outer table of the skull providing there has not been a recurrence of infection. This type of graft is indicated in extensive defects following operations for compound fractures and is preferable to silver and celluloid plates.

Rand and Dandy have reported cases of pneumocephalus following fractures through the frontal sinus or cribiform plate. The collection of air is removed with an aspirating needle and the dural rent can be repaired with a fascia transplant.

The occurrence of meningitis or brain abscess is not infrequent and must be treated symptomatically. The majority of meningitis cases are fatal but not so brain abscesses unless they are operated prematurely. No case of brain abscess should be approached surgically until fully encapsulated and this is characterized by a leucocyte count of 12,000 or below, a normal temperature, localizing signs and a stationary stage of choked discs. The incidence of epilepsy is relatively small in properly managed cases and seldom does further surgery alleviate the condition unless there is definite evidence of depressed fracture or subdural hematoma.

The careful and repeated observations of the optic fundi are of greatest value in detecting a slowly developing lesion such as a subdural hematoma and often these conditions are not manifested for months after the injury.

Post traumatic headache, vertigo and epilepsy may be explained on the basis of interference in the circulation of cerebrospinal fluid. Usually these cases will be relieved by a dehydration regime but not infrequently the compensation element plays such a dominant role that too often the gold cure alone is effective.

Encephalography has been a valuable means of sifting the worthy from the malingerer when used in proper hands with full regard for the indications and contraindications.

SUMMARY

Conservative methods of treatment in head injuries, with due regard for shock, physiology and water metabolism and less tendency to hurriedly operate, have been rewarded by a marked reduction in mortality from 60 per cent to 25 per cent.

This is accomplished by careful observation of pulse, temperature, respiration, blood pressure and dehydration as indicated in each individual case. A careful adherence to this plan of therapy coupled with a more complete knowledge of the central nervous system will undoubtedly reduce mortality still further in the future.

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RECENT ADVANCES IN ENDOCRINOLOGY*

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(Continued from last number)

DISCUSSIONS

J. F. KELLY (Omaha): We are certainly indebted to Dr. Gardiner for this presentation of a broad subject in such a decisive way, we cannot help but feel there are or have been some cases in our experience which would have benefited greatly had we known some of these facts before.

To a radiologist this field is particularly interesting both from a diagnostic and a therapeutic standpoint, although not all of the glandular disturbances discussed by Dr. Gardiner are at present involved in radiological problems, some of them are very much so and there is one in particular which has come in for considerable study the last two or three years; namely the parathyroid which seems capable of causing changes in the osseus structures at almost any age of life and though some of these disturbances are not definitely proven to be due to the parathyroid, there is a great tendency among the present day investigators to group them closer and closer as time goes on. In this group we have rickets, osteomalacia, benign bone cysts, osteitis fibrosa cystica, Von Recklinghausen's disease and later in life Paget's disease. Some authors claim that the difference in the roentgenological appearance of these different diseases is due only to the difference in the age of the individual at the time the parathyroid disturbance appears. This may be so but undoubtedly there are pleuriglandular factors which account for some of these differences as well as the age factor. Regardless of their etiology however the interchangeable role played by the vitamins, endocrines and radiation therapy as evidenced by our experience in the so-called deficiency diseases, rickets, etc., make these agencies of interest to all practitioners as these and many other common every day disturbances have one or more of these agencies active in an etiologic or therapeutic role.

Radiologically all of the above mentioned diseases show quite typical roentgen characteristics and one is seldom, if ever, pressed hard for a definite and accurate diagnosis on one of them. On the other hand there are disturbances in bone structures occasionally encountered which are not characteristic of any of the above and it was the appearance of such a lesion which led Dr. Gardiner to the presentation of this paper and led myself to a wide research of the literature for some explanation of the shadows observed.

Clinically the patient had the cardinal symptoms of hyperparathyroidism and radiographically she showed demonstrable deviation from normal in some of the osseus structures, but I was forced to admit that I did not know what caused the evident bone changes in his patient. These bone defects might be described as linear areas of lessened density running transversely across the long axis of the bone, showing no evidence of attempted new bone formation and look on the whole like a united fracture of about six to ten weeks of age. There were many of them, the fibula and ribs showing the greatest number (See Fig. 1). These shadows were new in my experience and nothing in the literature up to that time which I had access to produced anything like it but there has since been a case reported by Dr. L. A. Milkman of Scranton, Pennsylvania, in the American Journal of Roentgenology in July, 1930, in which he calls the condition pseudo-fracture, late rickets, osteomalacia.

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*Read before annual meeting Nebraska State Medical Association, Omaha, May 12-14, 1931.

His patient was a school teacher who complained over a period of three or four years. She was extremely weak and complained of pain on motion and was diagnosed a myotonia as the early x-rays were negative, but in 1928 when she was x-rayed by Dr. Milkman these unusual areas of decalcification were noted and a search of the literature brought out a condition described by the Germans and the Austrians as a hunger osteopathy and was probably due to a dietary or deficiency disease incident to the hardships of war. Most of the European writers on the subject stated that the etiological factor was lack of food. They also incrimated all of the endocrines and finally the vitamins and from our conception of present day physiology and pathology it is difficult for us to ignore a consideration of any of these factors when we see an unusual type of bone pathology on the x-ray films.

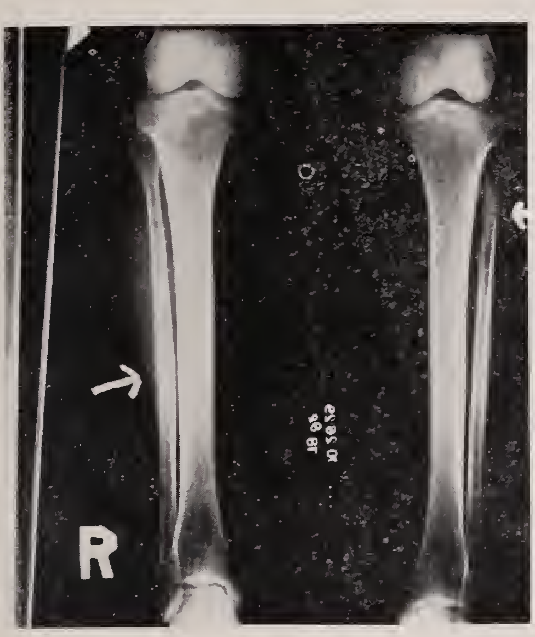


Fig. 1—In the above reproduction the pseudo fracture line in the upper third of the left fibula is quite evident and is an excellent reproduction of what these lines look like on the original film. The linear defect in the right fibula is not so clearly outlined.

The advances made in the last ten years in correlating the biological effects of various types of radiation, of the endocrines and of the vitamins, have made it necessary that every practitioner no matter how limited his field of work or what his specialty, become more or less conversant with this progress made in this field as it has had a far reaching effect in the prevention and treatment of many diseases of both known and unknown etiology.

There is no excuse for the presentation of such an unusual case to a body of busy practitioners who are interested in every day clinical problems and not rare cases, except to emphasize the role played by the endocrines and the vitamins as well as some forms of radiation in the prevention and treatment of diseases and these factors must be thoroughly studied by the practitioners of medicine as even the layman of today is well aware of some of their activities and if the regular physician ignores or minimizes the importance of any of them the layman quickly turns to the quack who is all equipped to feed them glands or herbs or radiate them as the individual may desire.

In closing I again wish to thank Dr. Gardiner for opening up this field in which so much progress has been made in the last few years, and even though this presentation of a rare bone case is in itself of no importance I hope it serves to awaken in all of us an interest in the advances being made in the study of the vitamins, endocrines and radiation therapy in connection with the prevention and treatment of some of our common every day clinical problems.

M. C. HOWARD (Omaha): A number of years ago the medical profession became interested in focal infection as an etiological factor in chronic systemic diseases. Up to this time very little importance had been given to a definite primary factor in these conditions. The symptoms and pathology found were generally attributed to local changes in the organ at fault. It remained for Dr. Billings and his associates to draw conclusions from the cause and the effect of bacterial infections. These theories were put into practice and brilliant work by Dr. Rosenau eventually fulfilled Koch's law in many instances. That there have been failures and disappointments in the removal of these foci, is apparent to all of us, but nevertheless a distinct advance had been made in the science of medicine.

The paper by Dr. Gardiner is merely a foreword of what we may expect in the realms of endocrinology. He reports numerous instances where fine therapeutic results were obtained in certain endocrin disturbances, but at the same time he has made us realize that definite relief of symptoms would not always follow when the dysfunctioning gland was removed or some glandular substance prescribed.

I am sure that every one of us is an endocrinologist. We may not profess such a specialty, but in our every day routine, we are constantly coming in contact with endocrine disturbances. Take the patients with the amenorrhoeas and dysmenorrhoeas, and similar pelvic disturbances where no pelvic pathology is found. These symptoms must certainly be due to some endocrine imbalance, and the majority of us attempt to treat the symptoms in these patients by some form of glandular therapy, rather than by any definite surgical procedure. The same may be said of those cases of hyper-glycemia, where the pancreas is at fault and insulin must be used to bring about a normal metabolism of carbohydrates. The discovery of insulin by Dr. Banting, stimulated the interest of research men in this field. As a result we soon had the active principle of the thyroid gland isolated and made available for the use of medical men in the treatment of certain diseases associated with a lowered calcium metabolism.

Only recently Cortin, a new extract from the adrenals has been made available, and apparently is effective in the treatment of Addison's disease. These discoveries are giving to us definite means for attacking certain forms of glandular dysfunctions and patients formerly condemned to an early death, may be relieved of this fate.

So I believe that Doctor Gardiner should be congratulated for presenting such a paper to the medical society, and attempting to keep us vitally interested in this subject.

ALFRED SCHALEK, M. D., (Omaha): This subject is very important in medicine, but so far so little is known about it that most of what we do is speculation and experiment. However, I do believe the study of endocrine glands and diseases is going to be very valuable when it is more developed and better understood in the future.

I am very much interested in the connection of endocrine glands and skin diseases. I have given it a great deal of thought. I believe that often the pathology due to a disorder of the endocrine glands shows first in the skin. This may give the physician a suggestion for action in a systemic way which he did not think of before. We know now that diabetes, of which we have never known the right etiology, is due to a disorder of the pancreatic gland. But we still can only speculate on the functions of the adrenals, the pituitary, the thymus and other ductless glands.

Papers like this of Dr. Gardiner's are certainly a step in advance and will eventually lead to scientific knowledge of endocrine etiology, the same as we now depend on the recognition and the demonstration of microorganisms and their toxins in order to attack the source of diseases.

I thank you.

Z. N. KORTH, M. D., (Omaha): I was intensely interested in Dr. Gardiner's excellent paper especially because it was my privilege to assist in the treatment of one of the cases which he mentioned, and follow it through to necropsy. This was the case of hyperinsulinism reported from the Mayo Clinic in 1927—the first case reported, by the way, in which actual pathological and laboratory proof was presented. Since this patient presented a symptom complex which is quite characteristic of this type of hypersecretion a short review of the case may be interesting.

The patient was a physician 42 or 43 years of age. Past history negative except for a gastro-enterostomy done in 1919 for pain simulating peptic ulcer. No ulcer was found.

Eighteen months prior to the time he was seen by us at the clinic he began having gradually increasing attacks of faintness, weakness, sweating, hunger, nervousness, and at times disorientation and even unconsciousness. When food was withheld longer than usual he became unconscious and on a few occasions intravenous dextrose was necessary to revive him. This particular thing occurred once or twice while he was performing a surgical operation and only the forced feeding of an eggnog brought a return to consciousness. It was necessary for his wife to watch him at night and when need arose put a piece of candy in his mouth to prevent the occurrence of a hypoglycemic reaction while he slept.

At the clinic many laboratory tests were done but time does not permit review of them to any extent. The sugar tolerance test was a little high at the end of the first and second hour with sugar in the urine but at the end of the third and fourth hour was extremely low—as low as 31 and 27 mg per cent. Intervenous glucose was administered on two occasions to bring the patient back to consciousness during his stay in the hospital.

Dr. W. J. Mayo found at operation a hard nodular pancreatic tail—the head was apparently normal. Nodules in the liver made it necessary to close the belly without further surgery. Prior to operation 750 gm of sugar a day were necessary. Immediately following only 150 gm were needed, but this quickly rose to 1000 gm and remained there until his death 3 or 4 weeks after operation. On admittance he weighed 160 pounds—at time of death 170 pounds. He died apparently of exhaustion and was conscious up to the minute of his death.

Necropsy revealed a carcinoma of the islands of Langerhans with metastasis to the liver. Extracts found the carcinomatous tissue disclosed a large amount of insulin as demonstrated on laboratory animals. Morphologically the carcinomatous tissue was identical microscopically with insular tissue.

DR. GARDINER (Closing): In writing this paper I recalled a patient of five years previous. A young man, thirty years of age, brakeman by occupation, who was subject to convulsions and was finally compelled to seek other employment on account of the hazards associated with convulsive seizures and coma in his railroad work. Examination made at various clinics and competent physicians were at variance. The possibilities suggested were heart block and epilepsy. It is not impossible that he was a victim of the syndrome hyperinsulinism, which was practically an unknown entity at that time.

Reading in a newspaper recently of the account of a young man, an attendant at an oil station, who has at various times been stricken with attacks of convulsions and unconsciousness without any definite diagnosis being made, I went to the trouble of inquiring of the clinical pathologist at the hospital where he had been taken, while suffering from his last spell of convulsive seizures, as to what blood chemistry data they had on this patient, and received the answer that he was thought to be an epileptic and things let stand at that point.

I think this paper will have accomplished something, if the gentlemen present here, will bear the following facts in mind: That patients who suffer from paroxysmal attacks of hypertension should be thought of as possible victims of hypersecretion of the adrenals. That cases of convulsions and coma associated with faintness and relieved by food, are highly suspicious of a hypersecretion pancreatic syndrome, and that the patient who has obscure bone diseases may belong to the hyper-functioning parathyroid disorder.

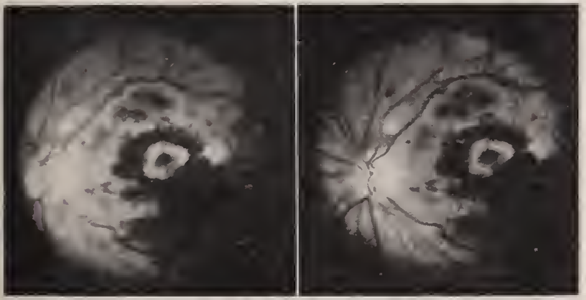
UNUSUAL RETINAL VASCULAR CHANGES IN TRAUMATIC INJURY OF THE CHEST. ANGIOPATHIA RETINAE TRAUMATICA. (PURTSCHER)

WM. H. STOKES, M. D., F. A. C. S.,
Omaha, Nebraska.

Ocular disturbances which are the result of injury to other parts of the body are extremely rare. Angiopathia retinae traumatica is a name given by Purtscher(1) to a peculiar fundus change, in which there is probably an extravasation of lymph into the retinal tissues, as the result of a severe injury,—generally a head injury. In some instances of trauma from severe compression of the chest, vascular complications may arise. The changes which occur in the fundi are of importance not only to the ophthalmologist but also to the internist and surgeon.

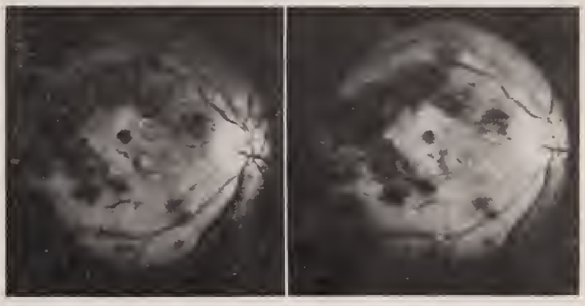
The fundus changes accompanying such injuries have been reported from several European clinics and the writers have discussed the etiology and possible pathology, but there still exists considerable controversy concerning their cause. In reviewing the available literature on these interesting changes, I find very little reference to it by American ophthalmologists. In fact little has been written and practically no experimental work has been done to account for the exact cause of these retinal changes.

Case Report: Mr. F. L. R., age 56. The patient was in an automobile accident three weeks ago and was thrown from his car. He fell against a telephone pole on his left chest. He retained consciousness throughout. The accident was followed by immediate blindness in both eyes. When he was led to another car, he complained of pain in his left shoulder and chest. Dr. E. Sheldon Watson of Lusk, Wyoming, who referred the patient, gave this additional information. "At the time of injury or following it, there was no discoloration of the face or eyelids and there was no evidence of trauma about the head. There were, however, a few petechial subconjunctival hemorrhages in the region of the outer canthus of the left eye. There was no bleeding from the nose, gums, pharynx or ears, nor was there any leakage of cerebro-spinal fluid. All reflexes were normal. Temperature 98, pulse 80, blood pressure 115 systlic, 80 diastolic. About the third day a slight transient glycosuria appeared which disappeared the following day." After admission to the hospital (three weeks after the accident) Dr. R. W. Bliss gave the following report: "Patient complains of soreness in his right chest. There is definite impairment of resonance with markedly decreased voice sounds at the right base, probably due to the fracture of the ribs and probable hemothorax. Heart tones are fair, no murmurs, blood pressure, systolic 95 and diastolic 70. The neurological examination is essentially negative. No disturbance of sensation. Muscular power good. Reflexes both superficial and deep are negative. Spine is normal." Fluoroscopic and roentgenographic studies of the chest show a fracture of the second and third ribs on the left, and the eighth, ninth, tenth and eleventh ribs on the right. Right hydro-pneumothorax, partial, with right diaphragm elevated. Wassermann on blood and spinal fluid is negative. Spinal fluid is clear, cell count 4, protein 0.015. Urinalysis is negative. Blood analysis—hemaglobin 95%; red blood cells 5,130,000; white blood cells 8,650; differential count is normal; blood chemistry is normal.



Stereophotograph of Right Fundus

An ophthalmoscopic examination reveals the following: In the right eye the vitreous is hazy and the disk is slightly blurred. The arteries are contracted, the veins are full and congested. Along the course of the superior and inferior temporal vessels, and particularly along the venous channels, there are many discrete, elevated, whitish patches with round borders, some of them confluent and forming larger areas, giving the appearance of cotton-wool exudate. Along the course of the superior temporal vein there is a massive hemorrhage extending into the periphery and encircling the entire macular area. The macula itself resembles an island in a lake of blood, and the most central portion of the fovea shows a round hemorrhage. There are hemorrhages along the course of the inferior temporal vein. These hemorrhages are flame-shaped. The white patches and hemorrhages are located in the superficial portion of the retina, partly covering the retinal vessels. The vision in this eye is reduced to shadows. In the left eye the retinal veins are markedly congested, the arteries are very narrow, and along the course of the superior and inferior temporal veins the same white patches are noted as in the right eye. The retina shows considerable loss in transparency and the hemorrhages are not as extensive in this eye as they are in the right. However, along the course of the inferior temporal vein there is a massive hemorrhage extending along the course of the vein, covering the vein in the periphery and encircling the area below the macula. Along the course of the superior temporal vein there are many small flame-shaped hemorrhages, especially in the neighborhood of the macula, and extend into the periphery of the fundus. A hemorrhage of considerable size is located directly in the center of the macula. This hemorrhage is round and has the appearance of being deeper in location. The vision in the left eye is reduced to shadows. The intraocular tension is normal in both eyes. An ophthalmoscopic examination two weeks later, shows some absorption of the hemorrhages, but the fundus condition is essentially the same. The vision has not improved.



Stereophotograph of Left Fundus

Retinal changes after head injuries were described by Purtscher in 1910. The fundus picture according to this author is very striking and characteristic and is due to the direct effect of a severe contusion injury to the head, resulting in a sudden increase of intracranial pressure. Along the retinal vessel and particularly along the veins, discrete, gray and white patches were seen. The veins were dilated and congested and the hemorrhages observed were apparently due to rupture of the retinal veins. Purtscher was of the opinion that the injury of the head was responsible for a compression to the spine in its longitudinal axis. As a result of this compression there was an increased intracranial pressure, forcing the spinal fluid through the subarachnoidal spaces into the nerve-head, and along the retinal vessels, extravasating into the retinal tissue through the ruptured perivascular lymph spaces. In 1912 Purtscher reported five more cases in which the retinal changes occurred as the result of head injuries, and his conclusions were again that a sudden increase in the intracranial pressure was responsible for a rupture of the perivascular lymph sheaths and the appearance of the white patches. Since that date a few more cases are added to the literature.

Knusel(2) and later Vogt(3), bring the total of reported cases up to ten, affecting thirteen eyes, including three cases of their own. These writers concluded that the white opacities were mainly located on the temporal side of the fundus above and below the disk and along the venous trunks. The optic nerve revealed no pathology. The opacities were round, mostly discrete, but at times more confluent. They were milky to silvery white in color and were located in the inner layers of the retina. These patches and the hemorrhages observed by these two authors, were the direct consequences of trauma, a head injury. In none of their own cases was there a compression injury to the spine. According to Vogt, the marked passive congestion of the retinal circulation was responsible for a rupture of the perivascular lymph sheaths of the veins, resulting in exudates and hemorrhages.

In 1927 Rubel(4) observed another case of head injury in which this fundus picture was studied. The close relationship between the exudates and hemorrhages in his own case was clearly shown. Rubel attached considerable importance to the fact that these smaller hemorrhages were often covered by exudates and some of the hemorrhages were not discovered until after absorption of the white patches. He believed that a sudden increase in venous pressure could produce structural changes in the neighborhood of the hemorrhages, which ophthalmoscopically appeared as white exudate, the exudate being possibly an infiltration of blood serum. Chou(5) in 1929 reported the last case, bringing the total of reported cases up to twelve, in which the retinal changes were due to a head injury.

Perthes(6), in 1899, first called attention to two accident cases in which there was an extensive discoloration of the head and neck region after a severe compression injury to the chest. Braun(7) also reported a similar cutaneous change of the head and neck region after a compression injury to the abdomen. His case showed an extensive subconjunctival hemorrhage and bleeding from the nose. The discoloration of the face and neck is described by various other authors (Wienecke(8), Milner(9)), as bluish, bluish-gray and purple, depending largely upon the injury and duration of the discoloration. The cause of this cutaneous change is a venous stasis brought about by an over-distention of the veins and capillaries.

Donders(10) was the first one to observe an expansion of the retinal veins after forced expiration. This congestion was visible in the larger venous trunks over the nerve-head area. Along with the dilatation of the veins there was a narrowing of the arteries.

Neck(11), in 1900, is given credit as the first one to discover fundus changes after a chest compression injury. In the case reported by him, small capillary hemorrhages were seen near the macula and with them a vitreous hemorrhage. After two months there was a transformation of the macular hemorrhages into a whitish area with a corresponding central scotoma with vision reduced to 4/12ths.

Wagenmann(12), in 1900, reported a small striate hemorrhage in the retina after a severe compression injury of the chest. A laborer, 19 years old, was caught between two cars. The face of the patient had a bluish discoloration as the result of small hemorrhages into the skin of the face and neck. There was also a subconjunctival hemorrhage and bleeding from the mucous membrane of the mouth.

In the two cases reported by Beal(13), the fundus picture simulated a thrombosis of the central retinal vein; that is, retinal edema, thin arteries, dilated and tortuous veins and retinal hemorrhages. Burell and Crandon(14) reported a case in which small retinal hemorrhages were demonstrable, and Wienecke cites a case in which two small hemorrhages were seen peripherally situated, leaving the central vision unimpaired.

Stower's(15) patient, a miner, 26 years old, showed marked reduction of vision (light perception in the right eye and 4/60 in the left eye) three days after a chest injury. The pupils were dilated. In the right eye the retinal arteries were narrowed, the veins markedly congested with striate hemorrhages along the veins. The optic nerve-head of the right eye was normal, but over the macula there was a diffuse grayish-white exudate. In the left eye the veins were congested, there was a small hemorrhage in the macula. In the neighborhood of the disk and along the vessels there were numerous grayish-white round spots. There was a bluish discoloration of the lids. And this author is the first one to compare his findings with the ones reported by Purtscher in 1910.

Scheer(16) reported the eighth case in which the cause could be attributed to a chest compression injury. A railroad man 35 years old, was caught between the bumpers of two cars. After a short period of unconsciousness he noticed a marked reduction in the vision of his left eye (vision right eye 10/20, left eye 5/30). There was a subconjunctival hemorrhage but no discoloration of the face or neck. He had a hemothorax but without a fracture of the ribs. There were no neurological signs. In the fundus there were two retinal hemorrhages above and below the macula along the course of the superior and inferior macular vein. Stahli's(17) case, a man 39 years old, was thrown out of a wagon with a resulting fracture of the 6th and 7th ribs. There was no evidence of a head injury. The patient was unconscious only a short period and was seen by the ophthalmologist four weeks after the accident. His vision at that time was markedly reduced and he recognized people only at a three meter distance. The external examination of the patient was negative. An ophthalmoscopic examination revealed the characteristic changes described by Purtscher.

Berrisford(18), in his paper on the ophthalmological findings in traumatic asphyxia, reported a further case. A man 47 years old, while demonstrating a two-ton tunneling machine was pinned under it accidentally. Eight minutes elapsed before he was released but he retained consciousness throughout. A little later he passed into a stuperous condition in which he remained for four hours. Upon admission to the hospital, the clinical appearance of the case was as follows: The entire face, neck and upper part of the chest was of a slate-blue color as well as the external surface of the upper limbs. Where the collar-band and elastic sleeve-holders exerted pressure upon the skin surface, the integument appeared normal in color and in sharp contrast to the adjacent pigmented field. There was marked distention of the veins of the neck and face together with a puffiness that involved the eyelids. The eyes were proptosed, the bulbar conjunctivae protruding between the palpebral fissures as the result of subconjunctival hemorrhages. The pupils were widely dilated and unresponsive to light. There were submucous petechial markings on both sides of the nasal septum, the soft palate and the tympanic membranes of the ears. There was a hemorrhage which occupied the position of the frenulum epiglotis. A fracture of the 2nd, 3rd and 4th ribs of the left thorax was demonstrable. An ophthalmoscopic examination made on the fourth day following the accident revealed the fact that in either eye there was a dilatation and increased tortuosity of the retinal veins together with a slight blurring of the disk margins, particularly the nasal halves. The left fundus showed two discrete, bluish-gray, elevated patches, approximating the superior temporal quadrant of the disk. The right fundus contained similar spots scattered about in the retinal area between the optic nerve-head and the macula but not involving the latter. Some distance from the disk, an elevated exudative area ensheathed the inferior temporal vein. Despite the most searching examination, no retinal hemorrhages could be detected in this patient. An examination was again made nine months after the accident and there remained not the slightest trace of the pre-existing fundus change.

Schneider(19), in 1924, gives the findings of a railroad man 47 years old, who suffered a chest injury on the previous day by getting between the bumpers of two railroad cars. There were petechial hemorrhages of the lids but no internal hemorrhages nor were there any fractured ribs. External appearance of this patient was normal. The vision, however, was reduced to 0.5 in the right eye and 0.6 in the left eye. Ophthalmoscopic examination revealed the typical lesions described by Purtscher as angiopathica retinae traumatica. Four weeks after the injury, the vision returned to normal. Mitchell(20), in an article on Eye Changes resulting from traumatic asphyxia, writes of a 25-year-old taxi driver who was pinned under a car. The pressure on the chest rendered him unconscious and when he awoke in the hospital his vision was restricted to perception of hand movements. There were numerous petechial hemorrhages on the head, neck and conjunctive, and a few hemorrhages in the right fundus with many exudates in the retina of both eyes.

COMMENT

Outstanding is the fact that the retinal changes reported are not due to a primary injury to the eyeball. According to Purtscher and others, the changes are the direct result of a severe contusion injury of the skull. The identical fundus picture has been observed after chest compression injuries and ophthalmoscopically cannot be differentiated from the ones originally reported by Purtscher (cases by Wogenmann, Scheer, Stahli, Schneider, etc.). That such an increase of intracranial pressure does occur after severe chest compression injuries has been shown experimentally by Willers(21) in rabbits after trephining operations. The intracranial pressure was increased by thorax and abdominal compression and was seen by a bulging of the brain through the trephine opening.

Best(22) considered that there was no essential difference between Purtscher's disease and commotio retinae or Berlin's opacity. But the latter condition has nothing in common with the retinal findings under consideration.

The cases reported by Berrisford and by Mitchell and described as traumatic asphyxia, should be considered in the general group, the retinal changes are identical with the ones described by Purtscher.

An explanation for these ophthalmoscopic changes must of course be speculative. In all probability they are the expression of a clinical entity traceable to a common cause. In this condition there arises at the moment of injury an increased pressure in the veins of the skull. These valveless channels confined in a rigid box of fixed volume do not permit of much expansion. Consequently we can assume that considerable back pressure may be transmitted to the blood column from the cavernous sinus and the central retinal vein which may have a direct communication with the cavernous sinus. This theory has already been stated by Berrisford.

Whether the diminution of vision is temporary, prolonged or permanent, depends mainly upon the degree and amount of back-pressure. In the main, transient disturbances of vision may be due to an intraocular venous stasis of short duration, implicating the retina and perhaps the choroid. Ophthalmoscopic examination in such cases may be negative (cases reported by Braun and Perthes). Hemorrhages into the optic nerve or vaginal spaces may produce a temporary inhibition of function of the optic nerve or in more severe cases, a permanent partial or total loss of vision through degeneration of the optic nerve fibers. (Cases reported by Kock(23), Roenne(24), Beatson(25), Parker(26) and Berrisford(18).

The discrete, whitish, elevated patches which are located in the retina are of interest. Their superficial position has been mentioned. Their location along the borders of the veins is striking. The arrangement of the perivascular lymph spaces around the veins and the characteristic appearance of these white spots along the course of the veins associated with hemorrhages would suggest an escape of fluid both lymph and blood, through the ruptured walls into the retinal tissue. These patches along with the hemorrhages may be the result of a sudden venous back pressure and suggest an ophthalmoscopic evidence of a sudden increase of intracranial venous pressure.

Papilledema is the result of a slow and gradual increase of intracranial pressure, the mechanism of which is different.

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DISCUSSION

J. J. HOMPES, M. D., (Lincoln): Mr. Chairman and Members of the Society: In view of the fact Dr. Stokes was not able to give his manuscript to me until Saturday afternoon, and this is a condition of which I know nothing—and by talking with him, I found until he had this case, he knew nothing—I have found it difficult to find time to prepare a discussion, for the case report and the literature disagree.

I found a couple of articles which had a direct bearing on this subject. Believing as I do, from the report on this case, that the doctor is dealing with eye findings in a case of traumatic asphyxia, I will show you a picture in an article by Laird and Borden, in which they reported 129 cases of traumatic asphyxia in 1930.

This case had a fracture of the chest and no injury to the head, but with hemorrhage, there was tremendous cyanosis of the upper chest, head, and neck. This picture is characteristic of this type of injury. This peculiar discoloration, which comes immediately, may stay a short time; or it may not come until the third day, and like a hemorrhage, it disappears not by fading out, but disappears as fading from blue to brown, even where the histological examination shows only a simple dilatation of the fundus.

The first reports of this particular condition were given in 1837. They combine reports up to this time with something over 140 of traumatic asphyxia. In a great number of this series of cases, according to an article by Howard, of Cincinnati, entitled "Traumatic Asphyxia with Special Reference to Its Ocular Distribution," published in 1923, this congestion of the lids is a common thing.

You will remember Dr. Stokes stated where there was no pressure on the skin, this discoloration was absent. Just so in the eye findings. The hemorrhages in the bulbar conjunctiva are wedge-shape, extending out to the canthi. In the part in which there is pressure made by the lids, hemorrhage is likely not to show.

This leads us to the point as to the probable mechanism of this sort of disturbance. Perthes suggested, due to the fact the veins over the neck and head are without valves, that compression through these veins was made easily. An overdilatation and probably paralysis was the cause of the picture that results.

It is interesting to note in the number of cases reported by Haas that blindness comes on immediately, as in the case report by Dr. Stokes. Also, in a number of cases there were no fundus findings at any time. In some cases reported, no fundus findings were present, and months later there was complete blindness from atrophy of the optic nerve.

It is rather difficult to understand why you get these fundus findings, and very little findings in the brain. In only one or two cases was there hemorrhage in the brain, and usually cerebral contusion of a mild degree was noticed. In one case there was a thin film of blood over the hemispheres.

In this day and age of frequent chest injuries due to road accidents, and because of the medico-legal troubles involved, it will be interesting for us to study these accidents more carefully than has been done in the past. I think Dr. Stokes' paper is a good stimulus for that sort of study.

J. JAY KEEGAN, M. D., (Omaha): I am very much interested in this report of Dr. Stokes. First, I wish to compliment him on bringing before the Society unusual observations which have not been recognized very much, particularly in this country. He has reviewed the literature in a careful manner.

This type of ocular finding may be more common than is thought, particularly because we have not looked for it.

My interest in this subject pertains more to some hemorrhages found occasionally in the brain following head injuries, and sometimes following injuries where there is practically no external injury to the head. In such cases, in my observation, it is common that they develop a severe chest injury, with fractured ribs, and a patient goes into coma without increased intracranial pressure, and usually dies within three days. The postmortem findings will show pin-shaped hemorrhages scattered throughout the facial nuclei. There has been a great deal of speculation as to the origin of these obscure injuries, just as there is at the present time in regard to the explanation of these hemorrhages in the fundus.

The idea of a back pressure in the vein from chest compression is to me a new conception of the possible origin of these hemorrhages. I think it certainly has significance. It may not explain the entire picture, but there is that possibility, there being no valves in the veins going to the head, that severe head compression can produce enormous pressure in the finer veins.

The neurological impression that has generally been given is that the impact of the head injury causes a facial spasm—first, a pressure which squeezes the blood out of the vessels; and then a spasm which shuts off the arterial circulation. During that period when blood is shut off, there is back flow. When the spasm is relieved, the arteries will dilate. Then there is the sudden impact of arterial blood, with a resultant rupture of some capillaries in the cerebral white substance. That is one of the speculative explanations for these hemorrhages which occur in the brain in conditions similar to those which produce retinal hemorrhage. The subject is one that bears more study, and should be looked for more often.

Big times now down at the capital of Panama with the town all agog over the inauguration of a new president. We are glad something can stir up a lazy Colon.

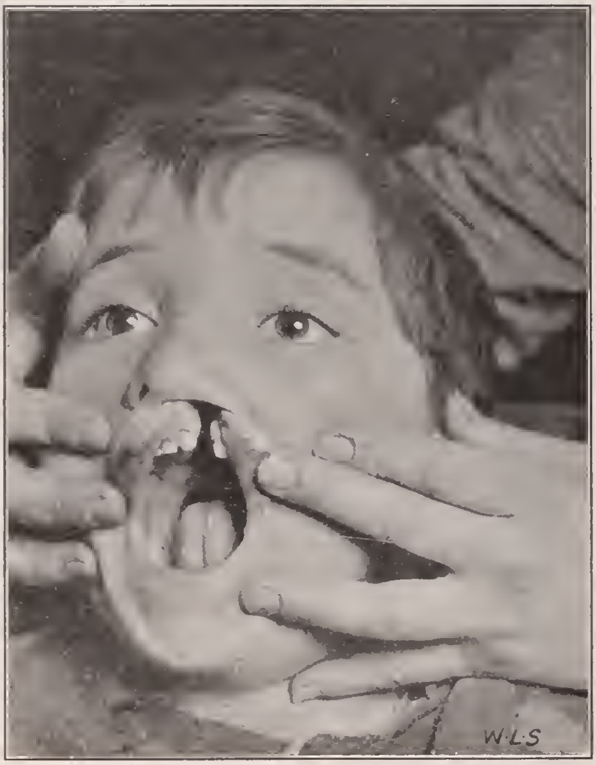
CLEFT PALATE*

WM. L. SHEARER, A. B., M. D., D. D. S., F. A. C. S., F. A. C. D.,
Omaha, Nebraska.

The types of cleft palate I wish to discuss are considered in that class of borderline cases.

Class I—Delayed correction of a complete unilateral cleft of hard and soft palate associated with complete cleft of lip and nostril.

Class II—Very broad cleft of the soft palate extending into the hard palate about midway between the posterior border of the horizontal plates of the palate bones and the lingual surface of the front teeth.



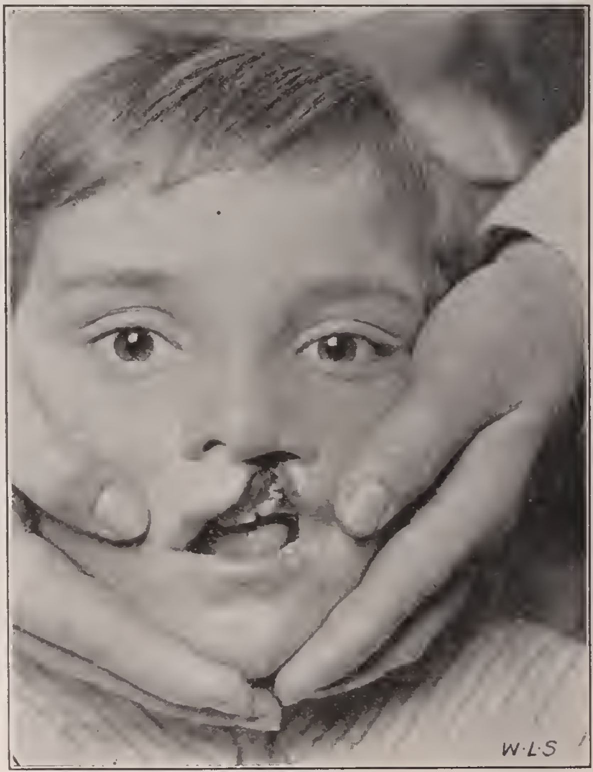
Case 1. Plate 1. Boy five years old. Showing cleft of bones. A cleft of this character should be operated at the age of from three to six weeks. Attempts had been made to close this palate before I was consulted. In cases of this character it is either necessary to employ a Greenstick fracture technic or long slow movement of the jaws into position.

In the early years of my practice, many cases of class I, referred to above, presented for correction. Most of them were from the ages of five to seventeen years.

First, we know that any form of plastic surgery must have some kind of foundation, or at least a semblance of an outline, to successfully manage plastic work of any kind.

These cases are too old for orthodontia, and, if not too old, the time required to bring about a result is too long for most parents to consider. Perhaps many of them could be quite successfully managed by orthodontia if they could be kept under observation long enough. It has been my experience not to be able to sell this idea. Therefore, some sort of a radical, surgical intervention, looking forward to a result, had to be considered.

Brophy gave us the greenstick fracture procedure, which, in many cases, was very successful. In this operation, the fracture was made in the long half of the anterior ridge of the palate bone. Work was done somewhat in the dark, and one could not see just how the fracture was progressing and where it would end.



Case 1. Plate 2. Shows condition after employment of Greenstick fracture to close cleft, and the bringing of the nose into the median line of the face.

I conceived the idea from the alveolectomy flap principle of laying back the muco-periosteal flap, taken from about ¼ of an inch above the cemento-enamel junction of the teeth, carrying the flap up as high as you wished, sometimes to the base of orbit. When the bone is so exposed, you can make the fracture exactly where you want it, respecting the pericementum of adjoining teeth. Also the fracture can be guided later-

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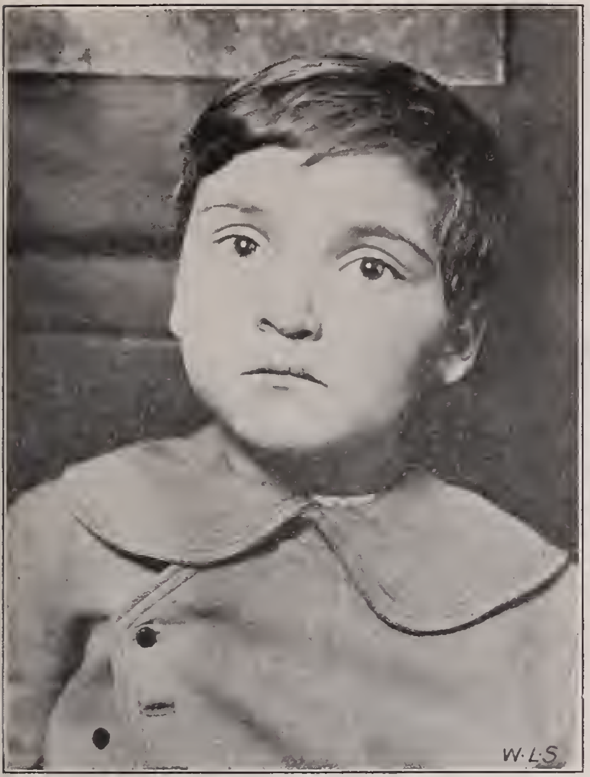
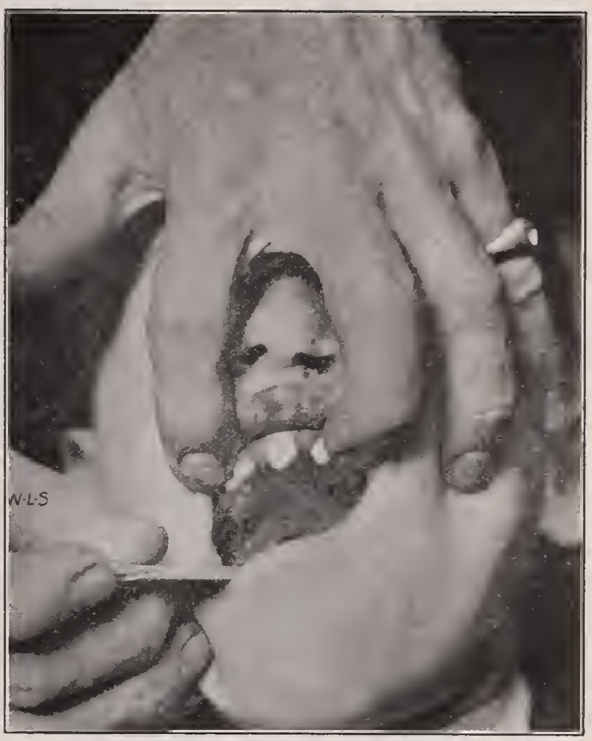
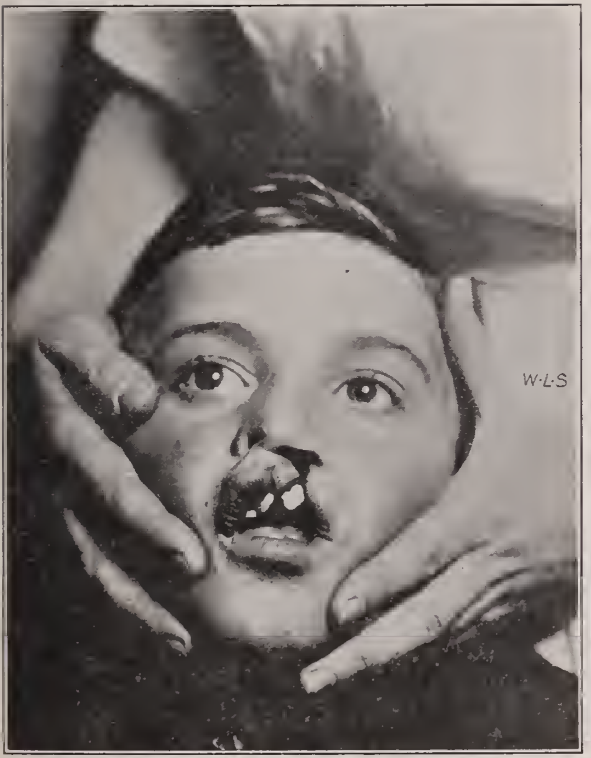
*Read before annual meeting Nebraska State Medical Association, Omaha, May 12-14, 1931.



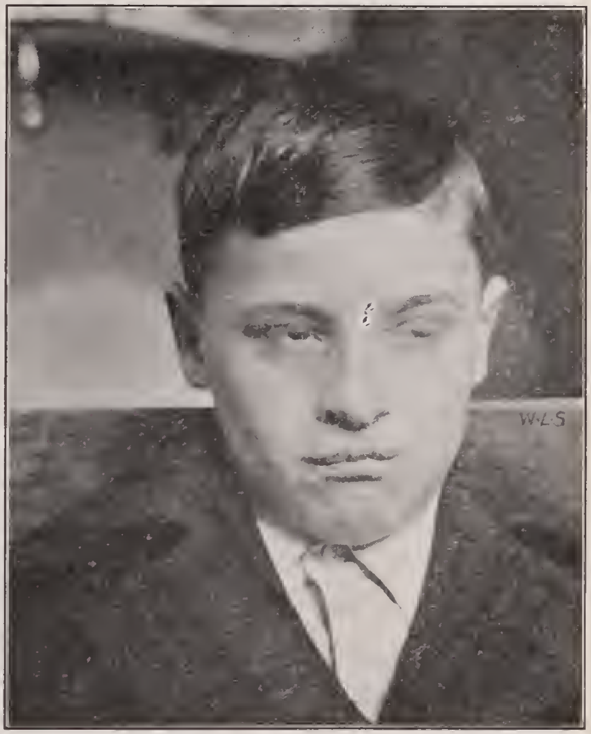
Case 1. Plate 3. Shows child after correction of the lip.



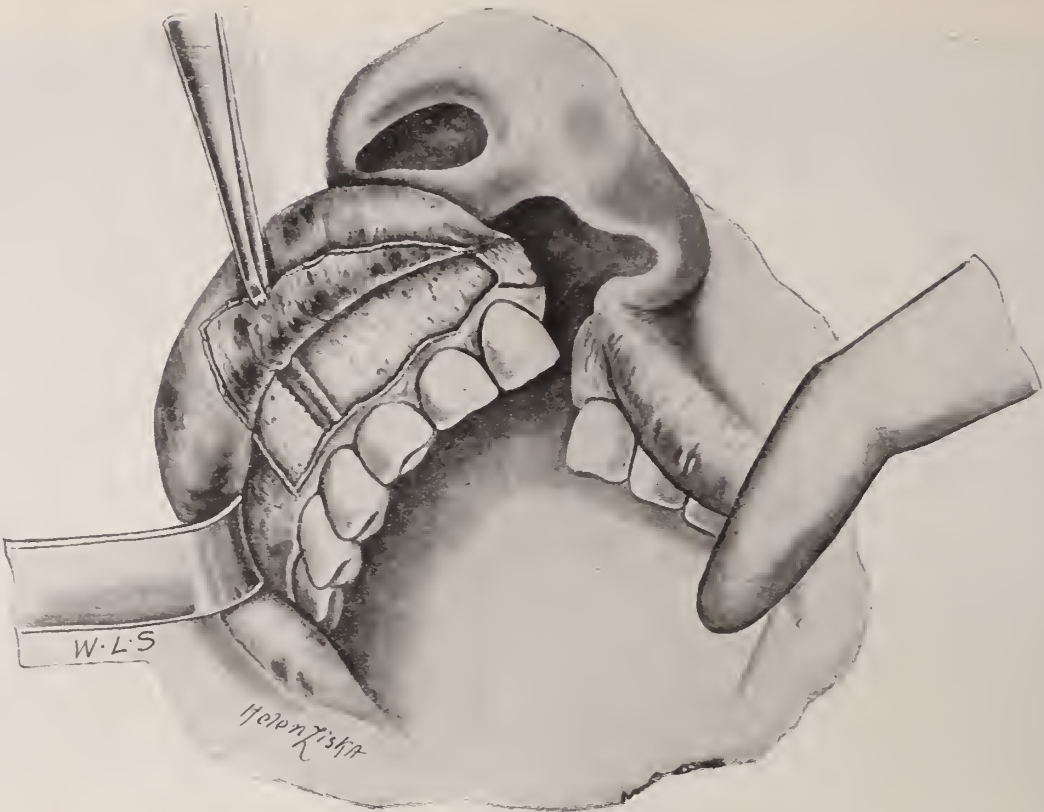
Case 2. Plate 2. Shows cleft of the hard and soft palate closed.



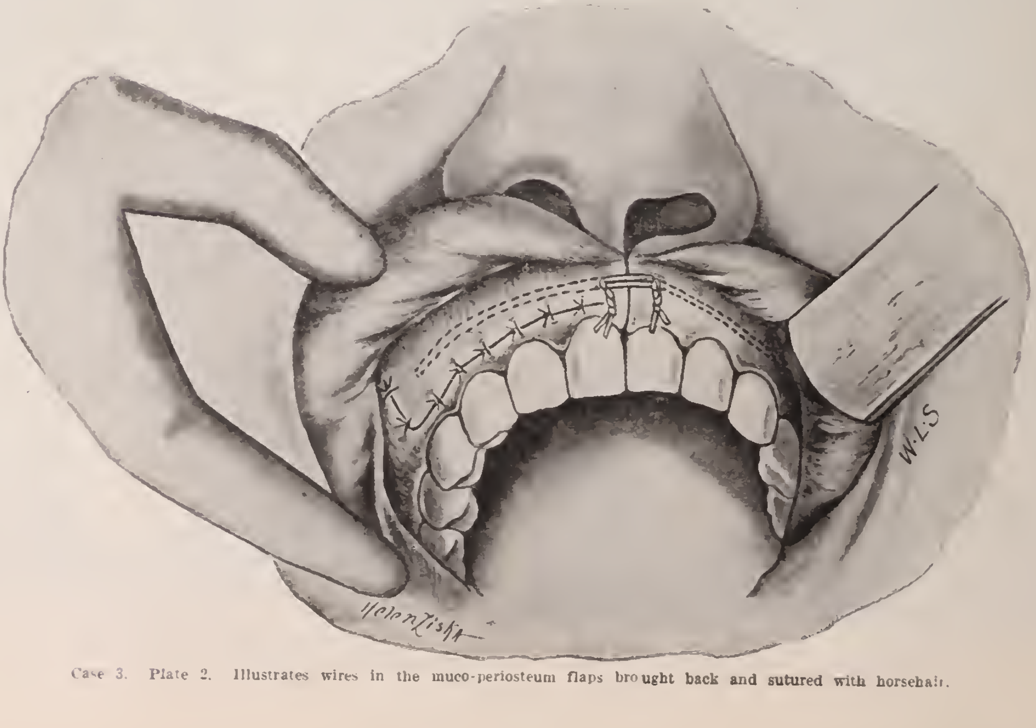
Case 2. Plate 1. Case similar to Case 1, Plate 1, only more advanced in years. Boy aged 11 years.



Case 2. Plate 3. Nose in middle of face and lip corrected. Case of this character should be taken care of early as described in paper, thus avoiding the necessity of heroic measures.



Case 3. Plate 1. Diagramatic of modification of Brophy Greenstick fracture operation.

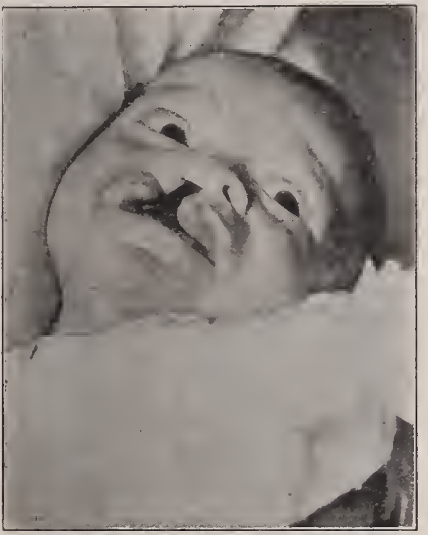


Case 3. Plate 2. Illustrates wires in the muco-periosteum flaps brought back and sutured with horsehair.

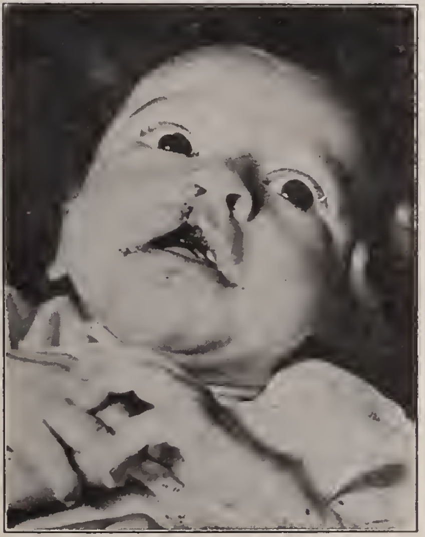
ally just where you wish, thus avoiding fracturing the malar bone into the orbital cavity.

When this is done, you can proceed to place silver wire through the two halves of the malar bones, using the Brophy straight needle drill, as you would if operation were performed in early infancy. With this open view method, you see exactly where you are placing the wires. The muco-periosteal flaps are brought back and sutured into position with horsehair.

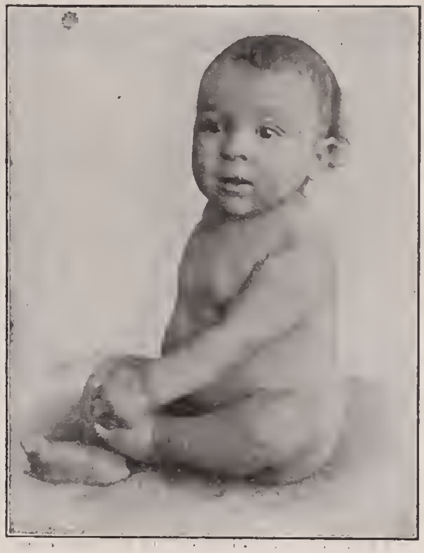
In laying back the flap, the distal incision of the flaps is made somewhat distally to the line of fracture and the muco-periosteal flaps cover perfectly the line of fracture, and the secretions of the mouth are kept away from exposed bone surfaces. In former methods, sloughing of the tissue could not be avoided. I operated eleven such cases, following above technic, one year, all of them healing by primary union.



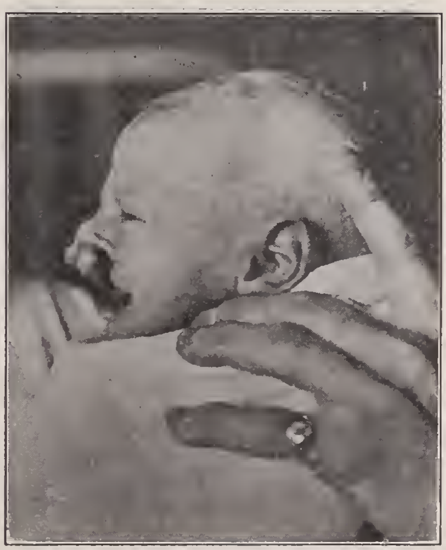
Case 4. Plate 1. Before surgical intervention.



Case 4. Plate 2. After bone surgery only.



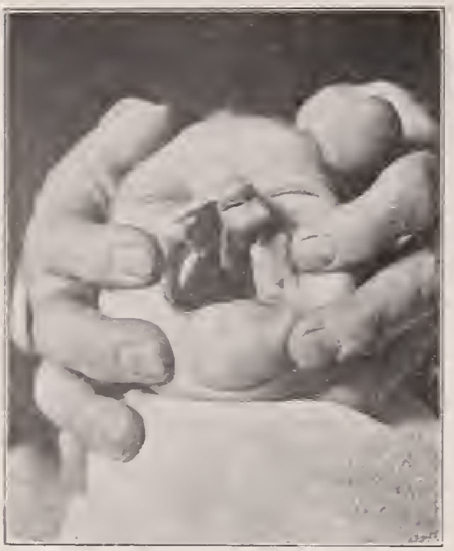
Case 4. Plate 3. Case completed.



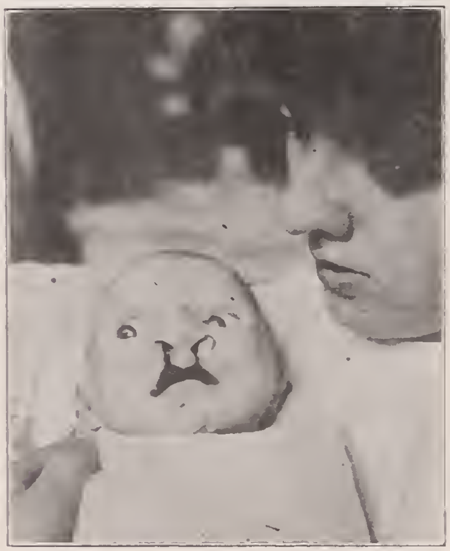
Case 5. Plate 1. Side view of a very extensive double cleft of the hard and soft palate with premaxillary protrusion.

With this procedure, five major things are accomplished:

1. You can see what you are doing.
2. The fractured point is completely covered with mucous membrane.
3. You have moved the nose into the middle of the face and corrected, at once, a terrible deformity.
4. You have obtained a primary union. No sloughing or complications are liable to occur if the technic is carefully carried out.
5. You have closed the cleft of the anterior ridge and made a foundation for further plastic surgery, and also made it possible to restore, to a great measure, normality and speech function.



Case 5. Plate 2. Front view of the same case.

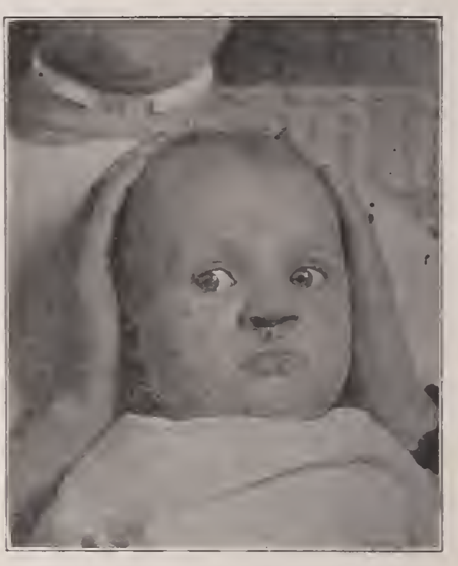


Case. 5. Plate 3. First operation. Placing the premaxillary bones into position to form a normal arch.

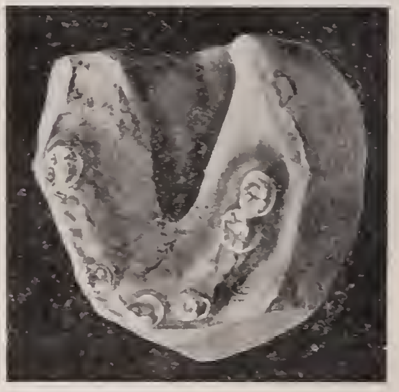
Lantern slides illustrating. diagrammatically, principle involved.

Class two cases, considered in this paper, represent those just on the borderline of possibility of correction. I shall illustrate two or three cases with the lantern. These cases, presenting as they do later in life, with atrophy of the muscles of palate and throat, due to lack of full function, are very difficult and often complication, by sloughing, occurs.

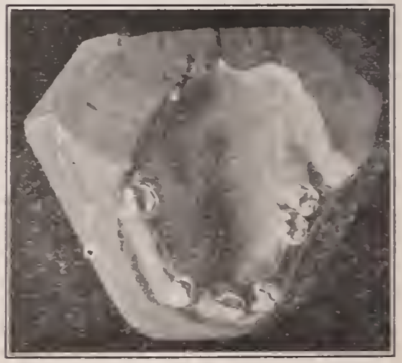
In presenting these cases, I only wish to stress the importance of carrying out, in detail, the steps of the operation as Brophy has given them to us, using silver wire, lead plates and horsehair, with the addition of an over and over grapevine stitch, which adds materially to the strength and, in many cases, I believe avoids sloughing coaptation stitches. It has been my experience that the more one packs with gauze of any kind the greater liklihood of complication and failure presents itself.



Case 5. Plate 4. After correction of lip.



Case 6. Plate 1. Cleft of the soft and part of the hard palate in women aged forty-four years.



Case 6. Plate 2. After closure of the complete cleft in one operation, without the employment of lateral incisions.

ACQUIRED HEMOLYTIC ICTERUS

With Report of a Case*

J. HAROLD LYNCH, M. D.,
Fairbury, Nebraska.

Chronic hemolytic icterus is a disease of the hematopoietic system characterized by an increased fragility of the erythrocytes, anemia of varying degree, an increase in the percentage of reticulated red cells, non-obstructive acholuric jaundice, splenomegaly, and urobilinuria. Two forms of this comparatively rare condition are recognized: one hereditary or congenital and usually familial; the other, apparently acquired.

Hemolytic icterus was first established as a clinical entity in 1898 by Hayem. The importance of the exacerbations of the disease was later emphasized by Widal, who termed them "crises of deglobulization" and considered them especially characteristic of the acquired form(7). The acquired form of the disease is, therefore, known as the Hayem-Widal type.

The etiology of the condition is obscure. It is generally believed to be based upon some toxic or infectious cause. Gibson believes that hemolytic jaundice, as well as Banti's disease, is the result of an invasion of the spleen by a streptothrix(5). Out of a total of six cases examined he claims to have identified streptothrix microscopically in five, and obtained positive cultures from the spleen in two. His mycotic hypothesis has not been generally accepted. The pathogenesis of the disease has been explained in two ways. One group of investigators (Widal. Vaquez, and others) believes that it is essentially an increased fragility of the red cells; or, in other words, that the cause of the disease is to be found in a perversion of the function of the bone marrow which produces cells that are more easily fragmented than normal cells. According to this theory, the splenomegaly is merely the reaction of the spleen to the presence in the blood of an increased number of cells that are ready for destruction(2). The other school (Minkowski, Chauffard, and Banti) believes that the cause of the disease lies in the spleen. This organ for some reason is excited to over-activity and destroys more cells than under normal conditions(2). The latter view has strong support in the great improvement that follows splenectomy, but predicates an influence of the spleen on red blood cells that are still circulating. The occurrence of occasional cases, typical in every respect except that the resistance of the red cells is normal, also points toward the splenic origin of the disease(7). However, neither of these theories is adequate to explain all of the findings in the disease.

There is no characteristic pathological picture in hemolytic icterus. As a result of the excessive blood destruction there is a deposition of blood pigment in the spleen, liver, kidneys, and bone marrow. The spleen is greatly enlarged (500 to 1500 gm.), firm, and dark. This is shown, histologically, to be chiefly due to congestion of both the splenic pulp and sinuses. Macrophages are increased but often masked by the intense congestion(7). There is usually a slight degree of fibrosis and thickening of the capsule, and areas of perisplenitis may be found. The liver may be occasionally enlarged and show a biliary cirrhosis. The bone marrow is hyperplastic and offers no histological evidence of any abnormality in the mode of erythrocyte production. Cholelithiasis is present in about 60 per cent of cases(2). The calculi are usually of the pure bilirubin-calcium type.

Acquired hemolytic jaundice usually appears first after puberty(10). The symptoms of the congenital and the acquired types are very similar, but the acquired form is much more severe. The disease may begin insidiously with the appearance of a mild icterus, or by a violent sudden onset of pain, fever. and the development of a marked jaundice which simulates that of an obstruction of the common bile duct. The attack subsides, but the jaundice persists though it becomes less intense(2). An enlarged spleen is often the first sign to call attention. This usually causes abdominal discomfort or a dragging pain in the left side(7). In crises of deglobulization the spleen enlarges considerably and in the healing processes following such crises the spleen may cease to be palpable. The liver is often slightly enlarged. The jaundice of hemolytic icterus is caused by an accumulation in the liver of the products of cell disintegration to such an extent that the liver is unable to take care of them properly and a certain amount of altered pigment is absorbed into the blood stream. This jaundice is unusual, and generally classified as subicterus. It is mild (bright yellow), deepens during a crisis and never becomes dark brown as in a long standing obstructive jaundice. The stools are normal in color and consistency and, except in exacerbations, bile pigment is absent from the urine(7). Urobilin is present in the urine. No itching is present, nor is there a decrease in the coagulability of the blood. The anemia, like the gravity of the condition, varies greatly in different cases and at different periods in the same case. At the one extreme it may be very mild, whereas at the other extreme it may be so grave that it verges on pernicious anemia. In fact, there is no sharp line between the severe forms of hemolytic jaundice and the hemolytic type of pernicious anemia with a tendency to jaundice and distinct enlargement of the spleen. Gilbert, Chabiel, and Benard believe they have observed the transition from one form to the other—an argument in favor of timely splenectomy(7). The hemoglobin is stated to be proportionately diminished. Anisocytosis is marked with predominance of microcytes(2). The red blood cells are markedly less resistant to hemolysis which, instead of beginning at about 0.44 per cent salt solution and being complete at 0.34 to 0.36 per cent, may begin as high as 0.7 per cent and be complete at 0.46 or 0.5 per cent(7). Certain authors have looked upon the decreased resistance of the red cells as pathognomonic of hemolytic jaundice. In some cases, however, the fragility is normal; and a decreased resistance is not confined to cases of hemolytic jaundice. It is also seen in the hemolytic jaundice of pneumonia, and cases of syphilitic jaundice have been reported in whom the fragility was increased(5). Reticulated cells are greatly increased, usually up to 15 to 20 per cent, but it may be as high as 95 per cent (Reynolds)(9). This is interpreted as indicating both an excessive demand for new cells and a competent bone marrow. Normoblasts are found occasionally. Polychromatophilia is marked but granular degeneration is not frequent. Myelocytes may be present. Megoblasts and myeloblasts are rare(2). There are no characteristic changes in the leucocyte picture(7). All of the symptoms are subject to marked exacerbations, sometimes accompanied by fever and always resulting in increased blood destruction, which are prone to follow fatigue, indiscretions in diet, excitement, etc. Occasionally one of the important symptoms, such as the increased fragility of the red corpuscles, the splenic tumor, or even the icterus is absent.

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*From The Lynch Clinic, Fairbury, Nebraska.

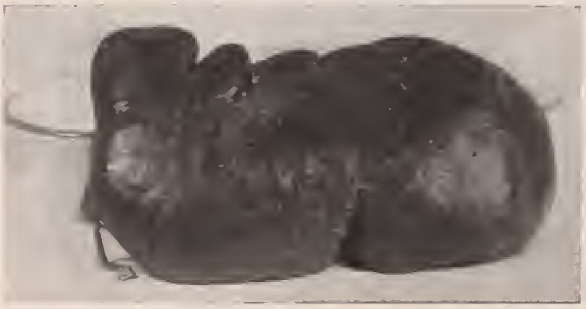
Fig. 1.—Photograph of convex surface of spleen, taken immediately after operation.

The differential diagnosis between hemolytic and non-hemolytic jaundice can be established by the van den Bergh test. As previously stated the differentiation from the hemolytic type of pernicious anemia may be very difficult. The fragility test as well as the reticulocyte count should be employed in any suspicious case. Cholelithiasis may complicate the symptoms. The disease has been confused with Banti's disease, endocarditis, and Hanot's cirrhosis of the liver; but by a careful consideration of the findings the differentiation should not be difficult.

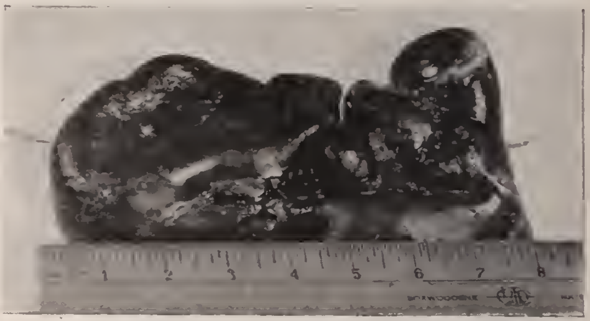

Fig. 2.—Shows visceral surface of the spleen, which weighed 960 gm.

Prognosis in the congenital type is good as to life. The prognosis in the acquired type is less favorable; death in many instances resulting directly from the anemia or from intercurrent infection. The course is in general more severe than in the congenital type, and the patients are incapacitated for work for long periods. The condition tends to become worse as life progresses. The mortality statistics which I have been able to find do not differentiate between the acquired and congenital types of the disease. Elliott, in 1917, reported the mortality, when splenectomy was performed, as 16 per cent in 65 cases(4). In 1928 W. J. Mayo reported 88 cases operated on at the Mayo Clinic with a hospital mortality of 4.54 per cent. Of the 81 patients traced, 73 were known to be living, of whom 72 were in good condition(8).

Splenectomy, first performed for hemolytic icterus by Banti in 1903, is the only treatment worthy of consideration. In spite of the fact that x-ray treatment has been beneficial in some cases and some men question whether such a serious procedure should be attempted in the mild cases, splenectomy is to date the only curative method of dealing with this disease. As Krumbhaar has said, "It is in hemolytic jaundice *par excellence* that splenectomy has had the greatest success." The success of splenectomy depends in a large measure on the selection of the time of operation and careful pre-operative preparation.

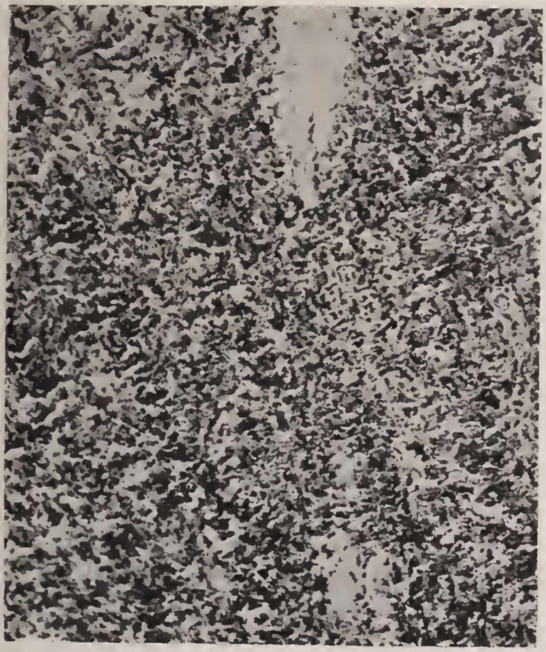

Fig. 3.—Photomicrograph (X140) of section from spleen showing the increase in fibrous tissue.

No operative procedure should be contemplated when active hemolysis is taking place. Preparation by transfusion is often necessary⁽²⁾.

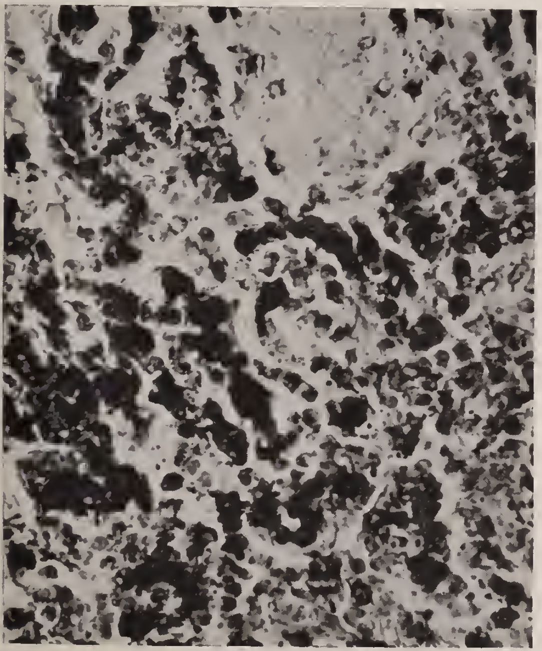

Fig. 4.—Photomicrograph (X600) of section from spleen. Note the large number of pigment granules.

Since hemolytic icterus is a disease of the reticulo-endothelial system it would be unreasonable to suppose that there would be no recurrences following splenectomy. A number of authors have called attention to this possibility. and have seen cases where recurrence developed, in one patient as early as four months, after operation(1). Usually, however, following splenectomy the characteristic exacerbations are no longer found. The jaundice promptly disappears. In the absence of the spleen, erythrocyte disintegration takes place in various remote areas of the body, probably in the bone marrow and possibly in the hemolymph nodes. Under these circumstances, the products of red cell destruction reach the liver by a longer route and in a less concentrated form. The liver is better able to take care of the material, and jaundice results only when red cell destruction has reached a higher degree than is required when the spleen is present(2). The excretion of urobilin is diminished. The erythrocyte count rises quickly. As far as the leucocytes are concerned, there may be a relative increase in the lymphocytes as well as in the eosinophile-neutrophiles(1). The resistance of the red blood cells returns to normal in a large number of cases. Frequently, even though the patient is clinically cured, this resistance of the red cells remains unchanged(2). The reticulated red cell count returns to normal. There seems to be no change in the patient's resistance to bacterial infection following removal of the spleen. Unlike pernicious anemia, the improvement that follows splenectomy in hemolytic jaundice is usually permanent(7).

CASE REPORT

A. C. E., white, male, age 32, was admitted to the Fairbury Hospital, January 28, 1930. He was complaining of loss of appetite, weakness, generalized aching, and a progressively increasing jaundice which began six days previously. For five days before admission he had been running a temperature between 102° and 103° F.

The patient had the usual diseases of childhood with no complications. He had smallpox in 1916. Prior to 1916 he had been in good health. In 1916 he had an attack of biliary colic followed by jaundice of short duration. In 1917 he had a second attack of biliary colic followed by jaundice which persisted. A few weeks later he had his third and last attack.

At intervals of three or four months he would become deeply jaundiced and complain of weakness, loss of appetite, and "heartburn". After taking magnesium sulphate the jaundice would become progressively less intense; but before becoming entirely clear he would have another attack. The attacks seemed to be prone to follow acute upper respiratory infections or indiscretions in diet. The jaundice was not accompanied by pruritis and the stools were normal in color.

In August, 1920, he had a cholecystectomy for "stones". His condition was not improved by the operation. The attacks continued the same until September, 1929, when he had an appendectomy for an acute gangrenous appendicitis. For some unknown reason, about two weeks following his appendectomy he became clinically free from jaundice and no longer had "heartburn", for the first time since 1917. He remained free from jaundice and gastric disturbances until onset of present illness. The patient gave no history of any hemorrhagic tendency, and had no pulmonary, cardiac, renal, or urinary symptoms. There was no family history of jaundice or anemia.

Examination on admission showed his temperature to be 101° F., pulse 112, respirations 22, and blood pressure 80/0. His skin had a pale yellow color. Mucous membranes were pale. Tongue coated. Tonsils large but contained no free pus. Heart moderately enlarged to the left; no murmurs or thrills. Abdominal examination showed the scars of the previous operations. The spleen was markedly enlarged, reaching down 5 cm. below the umbilicus and extending over to the median line. The notch of the spleen was palpable, and it was slightly tender on pressure. The liver was not palpable. He had a moderate kyphosis of the dorsal vertebrae. Physical examination was otherwise negative.

Urinalysis showed a light cloud of albumin, a few leucocytes, a positive reaction for urobilin, but no bile. The blood showed: 45 per cent hemoglobin, 2,300,000 erythrocytes, 9,000 leucocytes, and 10 per cent reticulocytes. There were several normoblasts and slight anisocytosis. The differential count was normal. Blood Wassermann was negative. Coagulation time 5.5 minutes. Blood type two (Moss). The van den Bergh test showed 7 mg. per 100 c.c. on the indirect test. Icteric index was 8.

For three days after admission his temperature ranged between 101° and 102° F. and then returned to normal by lysis. The patient was discharged February 4, after hospitalization for one week. On discharge the blood count was practically the same as on admission. The urine no longer showed albumin. Blood pressure 94/50. The spleen was somewhat smaller.

After leaving the hospital he gradually improved until March 3, 1930, when he began another crisis of nine days duration. Following this his spleen became much smaller, his anemia was less marked (Table 1.), and his general condition improved to such an extent that splenectomy was advised the first part of April. The patient insisted on postponing the operation for a few days while he attended to some business matters. On April 17, 1930, he began a very severe crisis, which confined him to bed for nearly a month. His general condition had not improved very much when his last crisis, from May 28 to June 21, occurred. Following this crisis his condition became satisfactory for splenectomy, and he was readmitted to the hospital on June 30, 1930.

Examination on this admission showed his temperature to be 98° F., pulse 80, respirations 18, and blood pressure 120/70. His skin had a very slight yellowish tinge. The spleen extended down to the level of the umbilicus and nearly to the median line. Urine showed a negative reaction for urobilin. The red blood cells showed a marked increased fragility; hemolysis beginning at 0.53 per cent salt solution, and being complete at 0.46 per cent. The van den Bergh test showed 6 mg. of bilirubin per 100 c.c. on the indirect test, and a slight reaction after one hour on the direct test. X-ray of skull and long bones showed nothing abnormal in density or structure.

On July 1, 1930, a splenectomy was performed under spinal anesthesia. The abdominal wound was closed without drainage. A donor was at hand, but blood transfusion was not necessary. On the fifth post-operative day he developed an acute follicular tonsillitis with a peritonsillar abscess, which caused the usual general and febrile reaction lasting for three days. Otherwise the post-operative course was uneventful. The yellow hue which the patient exhibited before operation rapidly disappeared and there was a rapid increase in his erythrocyte count and hemoglobin (Table 1.). He was discharged from the hospital on the fifteenth day following operation.

Table 1.—Blood Studies Showed the Following Change in the Blood Picture:

Date	Hemoglobin per cent (Dare)	Erythro-cytes	Leuco-cytes	Reticulo-cytes per cent
		PRE-OPERATIVE		
1-29-30	45	2,300,000	9,000	10
2- 3-30	45	2,570,000	10,550	—
2-20-30	60	2,510,000	8,500	—
4- 9-30	70	3,100,000	7,200	1
4-26-30	64	2,820,000	9,350	11
5-26-30	55	3,130,000	———	—
6-23-30	55	2,490,000	9,000	34
6-28-30	60	3,100,000	———	—
6-30-30	60	2,900,000	6,200	15
		POST-OPERATIVE		
7- 3-30	75	4,350,000	26,650	5
7- 5-30	75	3,790,000	12,800	2
7-11-30	80	4,360,000	15.550	—
8- 6-30	82	4,780,000	11,300	1
1-21-31	90	5,200,000	12,400	-1
8-27-31	90	5.130,000	12,600	-1

The pathological examination of the spleen by Dr. H. R. Wahl, of the University of Kansas, was as follows: Gross Pathology: Specimen consists of a spleen measuring 21 by 12.5 by 6 cm. and weighing 960 gm. Capsule is thin and slightly wrinkled. Tissue is very firm in consistency and cuts with increased resistance. Cut surface is dark reddish-brown, firm, and leathery. Malpighian bodies are few in number and appear as small grayish dots. Pulp appears increased and hemorrhagic. Histological Pathology: The capsule and trabeculae are not very prominent. The Malpighian bodies are relatively small. There is some increase in fibrous tissue in the pulp. There is an unusual amount of congestion and considerable accumulation of brown pigment. The pigment is in the form of fine brown granules present both extracellular and intracellular in the pulp. Diagnosis: Chronic splenitis showing accumulation of blood pigment (hemolytic jaundice).

Since operation the patient has gained thirty-two pounds in weight, and states that he feels better and stronger than at any other time within his memory. He has not had any of the characteristic exacerbations. He has had no jaundice or gastric disturbance. There is no urobilinuria. His anemia has disappeared and his reticulated red cell count is normal. Since splenectomy there has been a persistent leucocytosis with a relative increase in the lymphocytes. He still has some increased fragility of the erythrocytes, although it is not as marked as before operation; hemolysis beginning at 0.5 per cent salt solution and being complete at 0.38 per cent. At the present time, fourteen months after operation, the patient is clinically cured.

SUMMARY

1. It may be many years before the severe crises bring the patient to the physician.
2. A permanent cure may be predicted following splenectomy.
3. The mortality is comparatively low, if careful pre-operative preparation is made.
4. Cholelithiasis complicating the symptoms should not confuse the primary diagnosis.

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THERAPEUTIC VALUE OF AUTOGENOUS VACCINES

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The medical profession as a whole concedes the part played by focal infection in constitutional disturbances and disease, but it has not as a whole conceded the fact that autogenous vaccine is to play a major role in the therapeutics of the future.

Without being so enthusiastic as to believe that vaccine therapy is the sine qua non of medical practice, I have observed such striking results from the use of autogenous vaccine in certain cases, that I feel they have come to stay, since they are based on scientific principles.

Successful vaccine therapy depends upon—first, a specific diagnosis; second, the preparation of the vaccine, and third, the method of administration. Since the results of autogenous vaccines are dependent upon the specificity of the bacteria used, it is essential that the vaccine should be prepared from the specific bacteria causing the infection.

The best results are obtained in the acute and sub-acute cases, before extreme anatomic changes have been brought about, as the results of long standing systemic infection.

Medical progress is due to specific diagnosis and specific treatment. No diagnosis is more specific than the isolation of the bacteria in a given infection, and no treatment more specific than the use of an autogenous vaccine prepared from the isolated bacteria.

It is not to be expected that the removal of foci of infection and the preparation of autogenous vaccine will ever relieve the neuritic pains of tabes, spinal cord tumor, or the presumably arthritic pains the result of malignant metastases to bony parts.

In the hope, therefore, of contributing a little to this subject, I wish to report some of my experiences in the use of autogenous vaccine during the past four years.

In this group of cases are twenty-eight cases of arthritis, thirty cases of chronic duodenal ulcers that had undergone various medical regimes, six cases of herpes zoster, four cases of asthma with chronic bronchitis and two cases of chronic myocarditis. I shall only report a few of the uncommon type of cases that showed an excellent response to the use of the autogenous vaccine. By that I mean complete disappearance of all symptoms and the return to their daily labor. No case was considered a cure until one year had elapsed, during which time there had been a complete disappearance of all symptoms.

The various vaccines were prepared in the laboratories of Doctors Manning and Rubnitz. In all cases a brain broth culture media was used.

Case 1. A. S.—55 years old, chief complaint, history of chronic bronchitis and asthma,—unable to sleep at night due to coughing.

Will expectorate three or four cupfuls of mucopurulent sputum daily, temperature varied from 100 to 102 degrees, night sweats, loss of twelve pounds during the past month.

Physical examination was essentially negative, except for the following: typical symptoms of bronchitis and asthma, mild secondary anaemia, slight clubbing of the fingers, marked cyanosis, x-ray of chest and sputum was negative for T. B., blood and urine negative. A specimen of sputum was obtained and sent to Dr. Manning for culture. An Autogenous Vaccine was prepared of the strength of two hundred million organisms to each cc.

This was given sub-cutaneously every second day, beginning with one m.m. and increasing one m.m. every other day. Prompt improvement was noticed, temperature dropping to normal, cough lessening, sputum lessening, so that at the end of one month blood count was normal, complete disappearance of cough and expectoration and a gain of twenty pounds.

X-ray pictures at this time showed marked improvement in the condition of his lungs, patient states that he feels better now than he has for months.

Case 2. R. S.—38 years of age, cobbler, history of asthma and hay fever.

For the past three years during the month of August, has gone to Colorado Springs for relief of his hay fever and asthma which occurs yearly at this time.

His tests for sensitization were negative for all pollens. Ephedrine gave him some relief during the first few days. After that he showed some slight reaction to the use of the drug. During the heighth of his asthmatic seizures a specimen of sputum was obtained and sent to Doctor Manning, who made a culture of the same strength as in case No. 1.

This man also showed such marked improvement with the use of this vaccine that he could remain in Omaha during the month of August and continue with his daily labors, whereas in the past it was always necessary for him to leave during this month.

Case 3. A. L.—38 years of age, merchant, history of chronic duodenal ulcer. Had undergone several medical regimes, was considering surgical intervention when I first examined him. Gastric analysis showed an acidity of 90 and 60 degrees and presence of blood. Examination of stools were positive for blood. X-rays of stomach showed typical deformity of duodenal cap and some retention at end of six hours. X-ray examination of his teeth showed two molars with typical apical abscesses. These teeth were extracted and a culture sent to Dr. Rubnitz, who prepared an Autogenous Vaccine for me. A pure streptococcus was cultured.

The Autogenous Vaccine was given in addition to the diet which he had formerly taken, prompt improvement was noticed, complete disappearance of symptoms and at the end of the second month the patient was indulging in dietary indiscretions with apparently no return of the symptoms. Six months later x-ray examination showed marked improvement, no retention, gastric analysis within normal limits.

Case 4. J. M.—55 years of age, history of several attacks of herpes zoster during the past three years. These attacks were so severe that at times he would have to resort to the use of opiates for relief. Physical examination was essentially negative, with the exception of a stub of tonsil. This was removed and a pure streptococcus cultured. Prompt relief was obtained by the use of this vaccine and a complete disappearance of all symptoms.

Case 5. E. K.—38 years of age, present complaint, history of neuritis of the right leg for the past three months, also history of a chronic duodenal ulcer. This neuritis was so bad the patient has been using a cane for the past two months. Physical examination, including complete neurological examination was essentially negative with the exception of the duodenal ulcer and a stub of tonsil following a previous tonsillectomy.

This patient was referred to Doctor Knode, who removed the stub of tonsil. A pure streptococcus was obtained and an autogenous vaccine made.

This man noted immediate relief of his ulcer symptoms, as well as his neuritis at the same time.

Case 6. J. C.—55 years of age, history of pain over the heart, shortness of breath, bloating after meals, dyspnea on exertion, and nocturnal urination. Occasionally has noticed her ankles slightly edematous. Patient states this condition has been progressively worse during the past year. Physical examination shows the following: all heart sounds normal, but muffled, slight hypertrophy, wass. negative, urine shows a slight trace of albumen. Blood pressure: systolic 138 degrees, diastolic 98 degrees. The electrocardiogram shows QRS complexes are definitely deformed by notching in all leads, but they are low amplitude and have an increased base of 0.14 second.

X-ray examination shows marked infection present in all upper teeth. This patient was referred to Dr. Shearer, who did a complete upper alveolectomy. A pure streptococcus was obtained and cultured on a brain broth media.

Under this treatment patient has shown marked improvement. Dyspnea has cleared up, disappearance of her bloating after meals, and nocturnal urination.

She can now do her daily work around the house.

Method of administration of the vaccine is as follows—starting with one minim on alternate days, this is increased one minim until at the sight of injection a reddened indurated area appears. When this appears the dosage should be cut in half until the desired therapeutic result is obtained.

I desire at this time to express my thanks to Doctors Manning and Rubnitz, who gave me considerable help in the preparation of these vaccines.

CONCLUSION

1. The four cases of chronic bronchitis and asthma where autogenous vaccines were prepared from the sputum yielded such striking results as to warrant the writer in recommending this mode of therapy in those cases where the tests for sensitization are negative for all pollens used.

2. Acute and sub-acute cases show the best results before extreme anatomic changes have been brought about.

3. Brain broth as a culture media gave the best results in the preparation of these vaccines.

4. As soon as this reddened indurated area appears at the site of injection the dose should be cut in half, if not, symptoms of anaphylaxis are apt to appear. This happened in one of my early cases.

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GETTING AT THE CAUSE

The Reporter—"And to what do you attribute your wonderful age?"

The Centenarian—"Well, as far as I can make out, sir, it lies between somebody's salts, and someone's old ale, though there's a beef extract and invalid port wot's in the running, but the bargaining ain't finished yet."—The Passing Show (London).

TREATMENT OF FRACTURES OF FEMORAL NECK BY OPEN OPERATION

Bishop Clarkson Memorial Hospital Staff Meeting

JOHN PRENTISS LORD, M. D.,
Omaha, Nebraska.

I wish to report three cases of fracture of the femoral neck treated by open operation.

A woman, 47 years of age, slipped as she was entering a doctor's office, striking her hip upon the floor, and fractured the neck of her left femur. It happened on one of our very hot summer days, August 6th. She being a rather obese woman, it seemed preferable to avoid a plaster cast. After a frank full discussion of the various methods of treatment, the patient assured me that decision on the choice of procedure rested entirely with me. I, therefore, decided to use the "Smith-Peterson" nail for fixation of the fragments after reduction. This was readily accomplished through an anterior wound directly over the fractured neck. A wound three inches deep was required to expose the lateral surface of the trochanter, and the special nail driven home into the head.

The x-ray showed the fragments in anatomic position, the alignment good, with no shortening. The operation was done satisfactorily under spinal anesthesia. The nail passed just below the neck and apparently impinged upon the inferior margin of the acetabulum. Bucks extension for temporary restraint was used; two weeks later a walking caliper was applied to her leg and hip to prevent any movement, and later to aid her in walking. It was made with a chest band reaching to the ninth ribs and later removed when deemed unnecessary.

Her progress was very favorable from the first, with the exception of a saphenous thrombo-phlebitis on the left side. This, however, didn't excite me very much as her general condition was good. The pain in her left groin and thigh was relieved by ice bags primarily, and later by heat.

An x-ray taken on October 22nd showed the fracture in the same perfect position as at previous examinations. On October 24th the nail was removed, and the wound left open with a gauze pack. The caliper was applied, and she began to walk with a crutch and some assistance. A checkup x-ray showed the head and neck of femur in anatomic position and osseous union had begun. Radiographically the results were excellent. Dependable osseous union, however, will not be complete for several months. It is the experience of all orthopedists that many cases are allowed to be up too soon, for it takes a longer period than hitherto anticipated, to secure adequate bony union.

It was gratifying to get the 100% position which was secured and to be assured of an equally good end result by continued protection of the union by prolonged use of the weight bearing caliper.

Your reporter has come to the conclusion that in good operative risks, less than 60 years, that the operation of nailing of the fractured femoral neck is a safe, simple and most satisfactory treatment. In this case a cast was avoided; an advantage worth considering when the thermometer is daily at 105 degrees. This patient had just previously lost a kidney which made the spinal anesthetic preferable and proved desirable. The flanged nail as introduced by Smith-Peterson is to be prefered. A hole for the track of the nail is desirable to insure the nail entering the head of femur at its central portion. That precaution was not taken in this instance.

The second case is that of a young girl eighteen years of age, who had been in an automobile accident the thirtieth of May, when she suffered a fracture of the neck of the left femur. She was taken immediately to a hospital, distant from Omaha, where traction was applied, and three days later a cast. This cast was on but five weeks when it was removed and a second one applied. It became necessary to take it off within ten days because of an acute swelling and severe pain in the left knee. On admittance to this hospital on September 13th the left limb was placed in a Hodgen splint with ice tongs extension to restore length. A local anesthetic was satisfactory. There was no evidence of callus or bony union by x-ray; therefore a bone grafting operation was decided upon. Anterior and lateral incisions were made, the former over the site of the fracture, the latter to expose the trochanter.

The Albee technique for bone grafting was used, the three inch graft was taken from the anterior surface of the tibia. A hole was drilled as guide for its insertion, through the trochanter into the neck and head of the femur. Bone meal borings were placed between the freshened fractured surfaces, and osteoperiosteal shavings placed about the line of fracture. A rubber tissue drain was inserted into the lateral wound, closure with S. W. G. and dermal. A hip spica from the breasts to the toes was applied.

A checkup film showed the bone peg in good position extending through the upper end of the femur through the neck into head, the fragments held in good position and alignment. Films taken shortly before leaving the hospital were satisfactory.

Her cast was removed November 21st; hot fomentations and massage with gentle manipulation were ordered, which gradually improved the edematous condition of the limb. The apposition is anatomic, and ample time should give her a normal limb.

It is my opinion that bony union cannot be expected by cast treatment after three months or longer when the fragments have not been in close approximation, and their surfaces sealed over with fibrous tissue. This girl had been four months without union. It was affirmed that a perfect result was possible and probable by a bone graft operation, and that this patient was entitled to a 100% result if it could be had. That there could be given no assurance of bony union after a year of cast treatment. That time so spent would be wasted; that the operative treatment is positively indicated especially when weeks and months have elapsed since the injury.

Our third case is a woman of 57 years who fell from a ladder last April, fracturing her right hip in the central portion of the neck. The home doctor placed the woman in traction and kept her so for five weeks. The sixth week he began removing the 12 pound weight for two hours each day. The next seven weeks the patient laid in bed with sand bag supports, after which time she was up in a wheel chair and began using her crutches. There was three-fourths of an inch shortening, and no evidence of union after seven months. Upon admission we applied a Buck's extension to her right leg with a 15 pound weight, as soon as she was admitted to the hospital, on November 17th. The second day five pounds was added and the third day the shortening having been overcome, she was taken to surgery for a bone grafting operation because the prognosis was poor for bony union without operative intervention. An incision was made below the anterior spine exposing the line of fracture. A second incision over the trochanter, and a hole drilled through the trochanter into the head and neck of femur. A bone graft from the tibia measuring one-fourth inch by three-eighths inch by three inches was driven into the neck and head, and cancellous tissue from the tibia placed between the freshened bone ends. Osteoperiosteal strips were placed around the line of fracture, with osteoperiosteal chips placed about the margins. Closure was effected in the deep structures with O chromic catgut, and superficially with silkworm gut and dermal. Drainage was provided by the use of a temporary rubber wick.

Films a week after the operation showed the head and neck of the femur held in good position by an autogenous bone peg, which passed through the neck and into the head in its lower portion.

The post-operative condition was fair. Her general condition was satisfactory. She was discharged in less than three weeks because of financial conditions, the result of drouth and grasshoppers. Both her wounds were fully healed. The convalescence is being conducted by her family physician.

The same indications prompted operative intervention in this women of 57, as in the young woman of 18. Separation of bone ends and seven months time, would result in permanent nonunion, instability, shortening and permanent disability. She came a distance of 300 miles and could pay for but three weeks of hospitalization. It was asserted by me that only the bone graft operation was feasible for satisfactory results. We made good in sending her home on time. Reports from Dakota are favorable, and time is confidently expected to give the 100% result sought.

For many years the preferred treatment of fractured hips has been the Whitman abduction method in cases of less than one week; the immediate treatment preferably. The primary indication is reduction and fixation, which should be absolute and secure for the necessary time. To secure union by bone, of course, will vary, thus necessitating frequent roentgenograms. It is now conceded that protection from weight bearing should be continued until ossification is demonstrated by the x-ray. Following this rule, six, eight, ten, twelve months, even two years, may be required for this result, in closed reduction cases. Bone graft cases should require less than one-half of this time. Many otherwise good results have hitherto been sacrificed by too early weight bearing. The well fitted efficient Thomas caliper worn until union by bone is demonstrated as the proper course. A full discussion of this subject would supply many added details; first principles only have been presented.

THE RULES OF HEALTH*

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INTRODUCTION

Our old definition of good health was satisfied by such physical and mental conditions which allowed us to keep at our duties and to avoid the hospital, the doctor and the druggist. Our newer conception of health is more ambitious. Good health implies more than the average statistical health. It implies optimal health. The best is none too good for the individual or for the human race. Good health should carry with it the capacity to live with the joy of living; to awaken exhilarated and eager for the day; to work with zest and enthusiasm for eight hours a day, and more if necessary; to rest with pleasure and tranquility; to play with joy and satisfaction; to retire in good spirits to a restful and refreshing slumber.

Good health brings freedom from mental anxiety and physical discomfort. It assures mental, emotional and bodily poise, cheerfulness, self-activity, self confidence, ambition, and outlook.

In order to attain this new standard of good health, we have formulated a few simple rules. In these we have considered not merely the body but the individual as a whole, for good health embraces physical vigor, mental equilibrium and emotional stability.

THE RULES FORMULATED

1. Have faith, hope and courage.

> Two men look out through the same bars
> One sees the mud and the other the stars.

2. Be calm. Take your work and your pleasure and even your troubles with the least amount of emotional expenditure. Eliminate hurry and worry.

3. Be cheerful, amiable and sociable under all conditions. The most important cause of high blood pressure is emotional instability—worry, doubt, anxiety, bursts of temper, envy, jealousy and fear of failure.

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*From the Department of Biological Chemistry and Nutrition, School of Medicine, Creighton University.

Laugh and the world laughs with you. Weep and the world laughs at you.

4. Put your best efforts into your task. Do not be satisfied merely with "getting by".

Before God's footstool to confess
A poor soul knelt and bowed his head,
I failed, he wailed. The Master said
Thou didst thy best—that is success.

5. Find happiness in your work. You may find it nowhere else. The goal of life is purposeful and creative living and not happiness. Happiness is a by-product obtained in the performance of duty. It can never be had by direct seeking.

6. Choose friends wisely. Avoid bores, vacuums, everlasting fault finders, unsympathetic individuals, and those who hold out no inspiration for you.

7. Give something to life. Giving brings happiness much greater than getting. To live a little you must give a little. Cast your slices of bread out upon the waters and they shall return to you in big loaves.

8. Aim high. Few people reach heaven because they set the sky as the limit. Set a goal for yourself. Do not drift. Do not waste your hours of leisure.

9. Learn to be happy with what you have, while you are working towards something better. Have your eyes upon heaven while your feet are on the earth. Hitch your wagon to a star, but let the wheels remain on the ground.

10. Learn to accept contentedly what you can reasonably obtain by the exercise of your best energies. The neurasthenic and the psychasthenic pine for the things they cannot get. What some people call ideals are generalized expressions of their maladjustments. We must face reality. We cannot live like a child in a wish world. Children get what they want by crying for it, adults by working for it.

11. Get interested in something that is useful and that will occupy your time. Do not idle. An idle brain is the devil's workshop.

12. Get interested in people outside of yourself. Get married and raise a family. Divide your tangible gains and your intangible treasures to multiply happiness for yourself and others.

13. Change with the changing world. Do not drive a horse and buggy while the rest of the world is riding around in an automobile.

14. Play a little every day. All work and no play makes for physical fatigue and mental dullness. Put the spirit of play into your work. Take the serious things of life playfully, but do not play with the serious things of life.

15. Get plenty of rest every day. Relax now and then during the course of your work. Learn to ease up and to let up. Whenever you feel fatigued or whenever you get the blues, relax for fifteen or twenty minutes and then go back to work.

Spend the greater part of your Sunday in the quiet of your home. Far too many people nowadays flit and hurry by and never once possess their soul before they die.

16. Get eight hours of sleep every day. Success does not come from being up all night. It comes from being awake all day.

17. Be out in the fresh air at least one hour during the day or evening. Walk if you can. Have an outdoor hobby in which you can be a personal participant—golf, tennis, horse-back riding, skating, hiking, canoeing, fishing, swimming.

18. Have a window open in your office or sitting room at all times and especially in your sleeping room.

19. Have your rooms comfortably warm and not too dry during the winter. At no time should the temperature of your working or living quarters rise above 68° Fahrenheit.

20. Wear clothing in the winter that keeps you warm in the out-door air, but when at work or at home remove all extra clothing.

21. In the summer get as much sunshine as you can. The more the better.

22. Take a five or ten minute bath once a day or at least every other day. The bath is not only necessary for personal cleanliness but it is even more necessary for the hygiene of the skin and for the keeping of the circulation in tone.

23. Eat a hearty but simple and frugal breakfast. Do not go to school or to work without it.

24. Drink two glasses of water with each meal.

25. Have some raw fruit or vegetable with each meal.

26. Take with each meal some citrous fruit (lime, lemon, orange or grapefruit), a serving of one of the iron-rich fruits (dates, figs, apricots, prunes or raisins), and a serving of one or more of the vitamin-rich vegetables (tomatoes, carrots, cabbage, spinach or lettuce).

27. Eat sea food at least once a week. Salmon, sardines, halibut, and codfish are valuable to round out the adequate diet.

28. Eat whole-cereal products and natural dairy products. Take whole grained breakfast foods and whole-wheat bread or whole-rye bread. Eat butter and not oleomargarine.

29. Drink at least two glasses of milk during the day, have a nibble of cheese at least once a day, and at least one egg a day.

.30. Keep your weight normal. Do not allow it to fall below the normal if you are under thirty. Do not allow it to rise above the normal if you are over thirty. Do not undereat or overeat. More people die by the knife and the fork than by the gun and the sword.

31. When you have a slight ailment, a cold, an attack of influenza, a running nose or a slight temperature, go home and rest or better still go to bed and stay there until all the symptoms subside. The best curative and recuperative agent is rest.

32. Use the prophylactic measures known to medical science to prevent serious infection. Get vaccinated against smallpox. If going on a vacation get immunized against typhoid. Protect yourself and your children against diphtheria.

33. Go to your physician not only when you are seriously ill, but also when you are inconvenienced by minor complaints, a sore throat, a carbuncle or boil, headache, chronic constipation, shortness of breath, dizziness, poor vision, lack of concentration, loss of memory, spells of fainting.

34. Have all minor physical defects corrected as early as possible.

35. Visit your physician and your dentist at least twice a year even though you feel as healthy as a brick. There are many serious diseases that do not hang out the red lantern of pain or even discomfort. Heart disease, kidney disease, diabetes, high blood pressure and hardening of the arteries may be present, but the individual may not be aware of their presence. Such conditions are usually found in unsuspecting people who go for a physical examination demanded by an insurance company, by the firm they work for, or by some organization they wish to join.

To cure is the voice of yesterday. To prevent is the divine whisper of today and tomorrow.

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CALL FOR ANNUAL MEETING PAPERS

If you wish to present a paper before the annual meeting of the Nebraska State Medical Association in May, send your name and title of paper, as soon as possible, to the office of the secretary, Dr. R. B. Adams, Centre McKinley Building, Lincoln, Nebr.

ANNUAL DUES

If your dues are not now paid, you are suspended and not entitled to medical defense or the *Journal*. Eight dollars plus your county society dues should be sent to your secretary-treasurer at once so you may be reinstated.

"HOW DO YOU DO?

Some pay their dues when due,
Some when overdue,
Some never do—
How do you do?"

DeKALB COUNTY PHYSICIANS PAY DUES

Referring to the payment of dues the *Illinois Medical Journal* is authority for the statement that the secretary of DeKalb County Medical society had all the 1932 dues collected before December, 1931. That's business and stamps the doctors, as well as the secretary, as business men.

AGED, INDIGENT PHYSICIANS

Within recent months two indirect appeals have reached the editor in behalf of aged physicians who were reported indigent and in need of financial assistance from their more fortunate brethren in the profession. Fortunately, on direct investigation, the one case proved to be founded on a misapprehension of the real facts, the case having been reported by a kind lady "afflicted with cardiac hypertrophy." The other case remains somewhat hazy, inasmuch as a letter of inquiry directed to the wife of the reported indigent physician, after several months, remains unanswered.

It brings to our attention, however, a problem we may have to solve any time.

Not many years ago a similar case founded on real need came to the attention of the profession and was handled by one of our members taking pledges from certain members of the profession for a monthly allowance which was handled through the physician who solicited the pledges, as a pension. This pension was paid until the death of the needy physician, a period of between one and two years, we believe. No finer example of brotherly spirit has ever been shown than this.

A number of years ago a movement was started in New York to establish a home for aged and indigent physicians and such a home was established in New York state under the presidency of Dr. Robert T. Morris. An attempt to make this movement countrywide and to get support from the American Medical Association, however, failed. It is stated that the home has since been closed, but the funds in the hands of the directors are being used to support former inmates.

Pennsylvania, in 1905, inaugurated a Medical Benevolence Fund and to start it allotted 15 cents from the dues of each member to the fund. This allotment has varied from year to year, but has averaged approximately 32 cents over a period of 26 years. The fund now aggregates $87,000. Only the earnings from the fund are available for distribution. The committee having charge of this fund may solicit subscriptions, donations and legacies to be added to the principal of the fund. Last year the Women's Auxiliary to the Pennsylvania Medical Society contributed the handsome sum of $6,000 to the fund.

The Massachusetts Medical Society and the West Virginia Medical Society, also have made some provision for the care of indigent physicians.

This is not an appeal to the profession to create a fund for benevolence at this time; rather it is a statement of facts leading us to think on possible duties in the future.

The medical profession will do its duty, if it sees a duty.

PROFESSOR SIGERIST ON MEDICAL HISTORY OF THE MIDDLE AGES

From the standpoint of the student of medical history one of the interesting events of December was the lecture at Omaha on December 17th of Professor Henry E. Sigerist of Leipzig. This lecture was given at the University College of Medicine under the auspices of Alpha Omega Alpha, the medical honor society. The lecture was sponsored also by Dr. Poynter, dean of the medical school. Dr. Robert E. Shrock acted as chairman for the occasion. Professor Sigerist made many interesting allusions to his study of the literature of the middle ages. It should be remembered that he is a successor to Professor Sudhoff, famous former professor of medical history at the University of Leipzig.

Professor Sigerist has carried his researches into libraries in all kinds of church and state institutions throughout Europe. Those who have visited the libraries of some of the famous castles, chateaus and monasteries will appreciate the difficulties that he has experienced in discovering and translating material which has been buried in these institutions for hundreds of years.

Brief reference was made to some of the medical customs and methods of the ancients. The sick were attended first and principally in the churches. The hopeless condition of some of the more seriously sick was illustrated by reference to the stoic philosopher who hanged himself because of the supposed incurability of a fractured femur. Reference was made to the influence of St. Benedict in founding brotherhoods and institutions for the care of the poor and the afflicted.

One of the interesting points with regard to early medical literary work was that with reference to the language employed. It will be remembered that the writings of Galen were all in Greek. At about the beginning of the third century there began to be a demand for books in what was then called "the vernacular language," which was Latin. It is interesting to compare this with similar demands later in time when books in Germany were asked for in German; and in France, in French; and Heister in Germany and Paré in France were criticised for writing in the vernacular when they wrote in German and French. One can remember not so many years ago when it was supposed that all of the best scientific writings were to be found in German or French, and English had come to be considered the popular language as compared to the other languages of science.

In the early middle ages it was necessary for Cassiodorus to advise that any writer of medicine should make it a practice to study the literature of the ancients. When the first Latin books were being produced, whether originals or translations, Galen, Soranus, and Dioscorides were the sources that had to be consulted. A little later, in the eleventh century, Constantinus Africanus was translating medical works out of the Arabic into Latin for the students in Europe.

Gerard of Cremona went to Toledo in Spain and worked with his pupils upon certain translations intended for use in the schools of medicine.

Professor Sigerist gave a very interesting review of his studies with regard to the use of certain medical plants and drugs. During the middle ages it was the practice to have in connection with practically every medical institution a special garden in which medicinal plants were grown. These plants were prepared in elaborate combinations for the treatment of the sick. That they were recognized and properly employed at all is to be wondered at because in the different herbals or books dealing with medicinal plants, great differences have been found by Professor Sigerist in the drawings and descriptions. However, by careful study it is possible to find uniform and distinguishing features of these plants even with the variations in illustration and description. Some of the famous artists of the middle ages are found to have made drawings and illustrations for these herbals. Professor Sigerist mentioned Durer and Brunfels as having contributed to such volumes.

It is Professor Sigerist's intention to publish eventually an entire catalogue of the literature of the early middle ages and to publish all or part of some of the most interesting and most valuable of the hitherto unpublished manuscripts.

—* * * *

DERMATOLOGIC HINT NO. 1

Unless an eruption presents moisture, multiformity, infiltration, indefinite outline and itching (or a very definite history of the same) a diagnosis of eczema cannot properly be made.

—Donald J. Wilson,
Omaha.

OBSTETRICAL AND GYNECOLOGICAL HINT NO. 1

Pituitrin and allied ocytocics have no place in the conduct of an obstetrical case, save following the third stage of labor. A TIRED UTERUS NEEDS REST, NOT STIMULATION.

—Harold S. Morgan,
Lincoln.

SOCIAL INSURANCE IS CONTRARY TO THE FUNDAMENTAL PRINCIPLES OF DEMOCRATIC GOVERNMENT

All forms of Social Insurance are contrary to the spirit of democratic government. They destroy individual incentive, initiative and self reliance. They substitute paternalistic control for independence of thought and action. We pride and congratulate ourselves on living under a democratic form of government but most of us fail to realize that we are slowly but surely drifting away from the true democratic spirit in government—that we are gradually substituting a hybrid form of government, a cross between bureaucracy and socialism. Personally, I am a firm believer in democracy and believe that many of our present ills are the direct result of already having deviated too far from the fundamental principles of democracy.

Individual responsibility is the foundation of democratic government. If a nation does not educate its citizens to individual responsibility, it will soon have no one capable of assuming public responsibility. Slowly through the ages the common man has risen from chattel slavery and serfdom to independence, freedom and personal liberty, and now some well-meaning but misguided people want to undo all this. They want to enslave him again, making him in fact a bondsman of the state. Organized society is forever forging new chains with which to shackle the free development of its members. It is forever meddling with the private affairs of its citizens. One of the best illustrations of this statement is found in a recent survey of the Citizens' Bureau of Milwaukee which found that that city is engaged in approximately three hundred different functions, one-fifth of which have been added during the last sixteen years. Milwaukee is no worse in this respect than many other cities in this country. Add to this the activities of the county, state and federal governments, and we find an explanation of the following fact—"In a period in which the population of the United States has increased ten per cent the number of persons holding civil office has increased forty per cent and the amount paid in salaries has increased one hundred and fifty per cent." Thirty years ago one person in every forty-five was in government employ while now one in every twelve is so employed.

"It is a profound mystery why the people of the present generation should so violently run after the very things their forefathers so violently ran away from in 1776. One of the chief indictments of King George set forth in the Declaration of Independence reads: 'He has erected a multitude of new offices and sent hither swams of officers to harass our people and eat out their substance'."

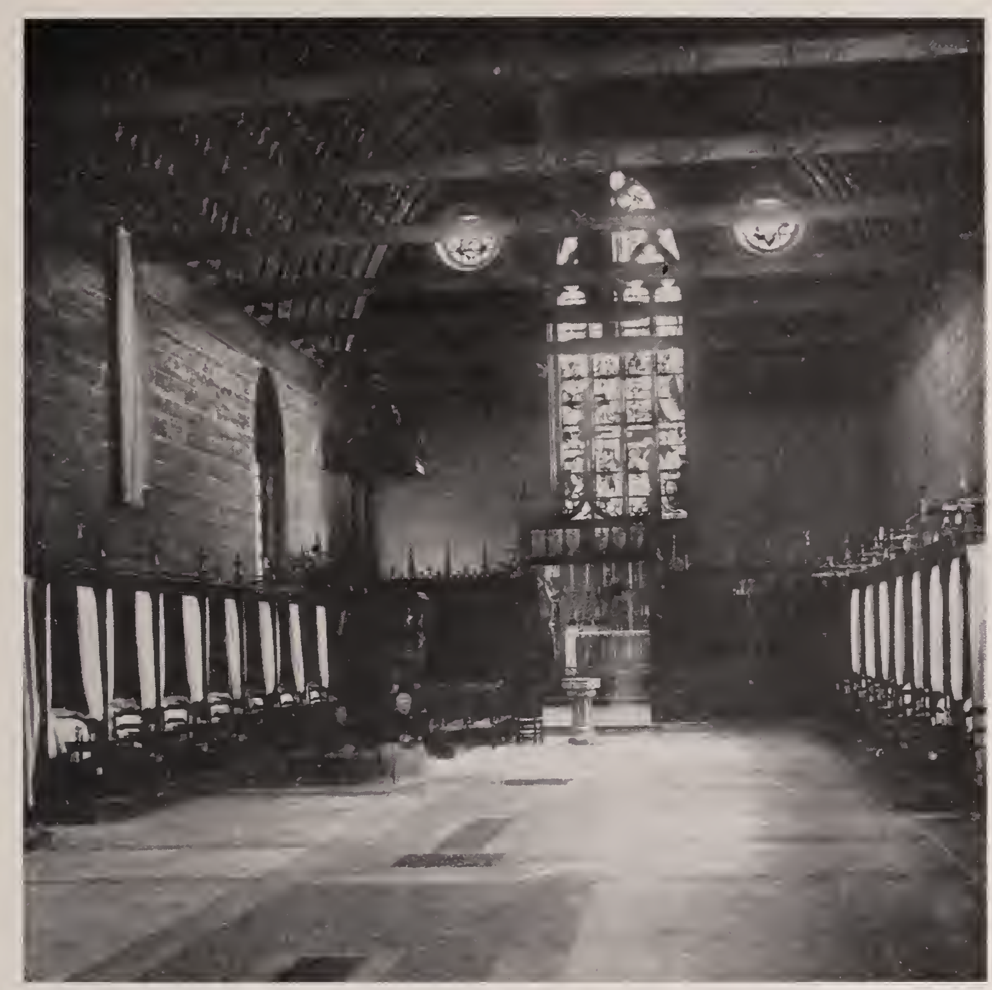
In a recent article, Dr. Harry Emmerson Fosdick makes a statement that seems particularly suitable in this connection. He said, "Many of those in society who are dissatisfied with present conditions know what they want to get away from, but they do not know whither they are going." I would add "nor do they seem to have any clear idea as to what they want." Before we adopt new laws we should make reasonably sure that such laws will not introduce new and greater evils than they are expected to cure, that they can actually be enforced, and that they are not likely to be abused in their administration.

A far reaching innovation such as Social Insurance must be viewed from many angles. We must consider its effect upon the general public, the insured, the employer, and the medical and dental professions.

If we are deliberately trying to get away from the democratic form of government having a definite objective in view; and if we are reasonably certain that the goal for which we are headed is worth while and is going to result in general social and economic betterment, an experiment with Social Insurance might be justified, but, even then, it is well to carefully weigh and consider what the wise founders of our government had to say on this important subject. I quote from the Declaration of Independence, "Prudence, indeed, would dictate that government long established should not be changed for light and transient reasons." If we a nation are just aimlessly drifting, as we seem to be, we are almost sure to get into serious trouble. We believe that we shall be able to show conclusively, in future articles, that in those countries in which it has had prolonged and extensive trial it actually has had serious consequences. These latter problems will be taken up in subsequent articles.

—Edward H. Ochsner,
Chicago.

Removing the teeth will cure some things, including the foolish belief that removing the teeth will cure everything.—Peoria Star.



Convalescent Hospital and Chapel

This unique picture is one of the treasures brought back by the editor and his daughter from their European trip several years ago. It represents a combination convalescent ward and chapel, the first one ever built, in the Hotel Dieu, Beaune. France. Patients attend chapel service lying abed or while seated on chairs placed aside the beds, as they desire. The beds on each side are in units, have curtains and remind one somewhat remotely of pullman berths. This was one of the most impressive sights of a very delightful trip.

The hospital, Hotel Dieu, was established in 1443 and retains its ancient appearance like a baronial castle and it is stated that the methods of the Middle Ages are still used in the conduct of the hospital. This statement does not apply to the medical or surgical service, rather to the "housekeeping." In the shadow of its ancient walls one pauses to reflect on the humanitarianism of ages long past and realizes that hospitalization is not a modern concept.

Beaune was the site of one of the largest hospital centers provided by the American Expeditionary Forces in France and after the Armistice was turned over for the use of the A. E. F., or "Doughboy", University planned to offer educational advantages to overseas soldiers, when it was thought, as it was immediately after the Armistice, that it would take two years to bring all the soldiers back to our shores.

SHALL THE SURGEON'S OR PATHOLOGIST'S DIAGNOSIS STAND IN APPENDICITIS CASES?

If you were to visit any number of standardized hospitals, you would find innumerable records, in which the surgeon has recorded "acute" appendicitis and the pathologist has recorded "chronic" appendicits.

These records are one source of our statistics. Statistics are being published to the effect that the mortality from appendicitis is increasing.

What is "acute" appendicitis?

If the term be confined to an acute inflammatory phenomenon of a virgin appendix, in my opinion, few cases are ever seen.

If the term be applied to an acute inflammatory phenomenon of an appendix which has been invaded some time in the past, many cases are seen.

The surgeon sees the whole clinical picture of the patient. He sees the appendix and surrounding tissues which present clinically an acute inflammatory reaction.

The pathologist sees the appendix only. The pathologist's report is the final word.

As a matter of just plain common sense which report should be accepted—the report of the surgeon who attends the patient before the operation, sees the operative field and attends the patient after the operation, or the report of the pathologist who makes a macroscopical or microscopical examination, usally several hours or days after removal of a detached appendix in the peaceful and tempermental seclusion of his laboratory?

—Czar Johnson,
Lincoln.

ANNUAL MEETING OF AMERICAN SOCIETY FOR STUDY OF ARTHRITIS

It was my good fortune to have been the invited guest of the American Society for the Study of Arthritis at their recent meeting in Pittsburgh on December 4th, 5th, and 6th. All the sessions were held at the Pittsburgh Athletic Club.

This small group of arthritis students, representing metropolitan centers from the Pacific to the Atlantic, from the Gulf of Mexico into Canada, gather each year to discuss not only their own problems, but to hear diverse opinions in regard to the various phases of the diagnosis and treatment of arthritis. Reginald Burbank of New York City is the president and on the first morning's session he introduced Dr. Rehfuss of Philadelphia, whose outstanding work on gastro-intestinal disturbances and biliary diseases, convinces one of the authority of his opinion.

There were no papers read but every man present had well thought out problems of which he asked questions and any one who felt capable was at liberty to voice his opinion in answer. Therefore, with Dr. Rehfuss on the platform, questions were asked of him and he in turn asked questions of the group.

One of the interesting things that Dr. Rehfuss brought up or discussed was the incidence and significance of muco-pus in the stomach and the influence of biliary and gastro-intestinal infections on arthritis. Muco-pus he states is found in the fasting stomach and he believes it is swallowed and comes from tonsils, teeth, sinuses, nasal pharynx, and upper respiratory tract. It only comes from the stomach wall when there is gastric syphilis, gastric carcinoma, and infective gastritis. The bacteriology of this muco-pus is absolutely similar to that which is found in the post-nasal region particularly, and he believes it is often responsible for arthritic infection, and that since almost every case of joint infection has positive findings in the gastrointestinal tract, it is impossible to divorce arthritis from gastro-intestinal disturbances and infections.

He brought out the fact that streptococci are found more profuse in the upper intestinal tract and generally decreased toward the lower end, however, the *B. coli* start below the middle of the intestinal tract and increase markedly toward the lower end.

In distinguishing whether the muco-pus or infection that is found on fractional analysis comes from the swallowed material or from the biliary tract, he states that if infected material is found only in the first specimen it can be considered as having been swallowed and comes from the duodenum. But if in the second specimen it is found, it probably comes from the gallbladder, and if found in the third specimen, the liver likewise is involved.

The nose and throat men during the discussion came in for some criticism due to the fact that they have often felt that when the tonsils were removed or the sinuses drained their duties were at an end in removing the focus of infection from the throat and naso-pharynx, but the preponderence of opinion was that very often streptococci are found, similar to those found in the tonsils at the time of operation, years after in the pillars and pharynz and that these sources of infection must be cleaned up if the removal of the tonsils have any influence on the ultimate relief of the arthritis. The same criticism was brought out in regard to pulling teeth. The fact was brought out that practically everyone over forty years old who has an infected tooth or a dead tooth has an infectious process in the mouth about the gums, etc., therefore, the removal of this tooth has little or no influence on the arthritis.

The question whether endocrine or metabolic disturbance and allergy without infection was the cause of arthritis was brought up by Dr. Rehfuss. Dr. Burbank promptly answered that arthritis was not primarily due to such conditions, that in such phases of the human life in which there was endocrine disturbance, such as the menopause, gland function and metabolism are at a low ebb and that these conditions might be contributing factors which could not be overlooked and should be given attention.

Considerable time was given to the diagnosis of a gallbladder disease and hepatic insufficiency, but since most of this discussion came out in the last issue of *Progressive Medicine* I shall make no attempt to review even briefly the discussion.

The one in whom I was more interested than anyone else there was Dr. H. Warren Crowe of London, England, whose work in arthritis at the Charter House Rheumatic Clinic and Research Institution has made him during the past few years recognized as one of the outstanding students of arthritis. His contributions to this subject have become well recognized and one cannot listen to his assuring voice without appreciating the sincerity of his opinion. He has pathologically described and identified a very large group of streptococci that cause arthritis. He has described a *staphylococcus albus* that also causes arthritis. This he calls *micrococcus deformans.* He has developed a media (Crowes Chocolate Media) in which morphological characteristics of these microbes are recognized with greatest accuracy. His treatment consists of vaccine containing various varieties of streptococci and *micrococcus deformans* that have caused arthritis. Along with this is used autogenous vaccine made from streptococci taken from foci in the patient to which he is peculiarly susceptible.

Now the important thing in the giving of specific vaccine is the dosage. The amount depends entirely on reaction or response. He never allows a general reaction if possible. The dosage should always be at the minimum. Many of these patients after very small doses have marked relief immediately or shortly thereafter, then in the course of five or six days have a relapse, then with another dose of vaccine they feel better again. With this line of treatment between 80% and 90% of his cases are either cured or greatly improved, and this seems to offer more than any other type of treatment we have found as yet for arthritis.

It was indeed interesting to note now quickly the ideas of such men as Reginald Burbank and H. Warren Crowe coincided.

During one of the sessions the question of "why during the rapid fall of the barometer prior to a storm and an increased barometric pressure is there a definite increase in symptoms in patients affected with arthritis?" Hodjupoulos, a serologist who gives considerable of his time to the study of arthritis in New York, showed a slide illustrating a small area of infection in the region of the joint, and in the thickly increased connective tissue were some unusual blood vessels. He called attention to the fact that the lining of the vessels had been proliferating and was particularly thick. This proliferation limited the extent of blood supply through these vessels to the region by one-fourth, even though there was an unusual number of vessels. This he calls an endarteritis. Now he states that when the barometric pressure goes down slowly these small bore blood vessels gradually accommodate themselves to the change, but if there is a sudden drop of barometric pressure they cannot accommodate themselves and starvation takes place with ultimate irritation of the nerve endings causing the pain and peripheral neuritis that the patient complains of.

Discussions such as these took part during the morning, afternoon and evening session of the three days. The meeting ended on Saturday noon with everyone feeling the time was well spent and personally I felt indeed honored to have had the opportunity of listening to such enlightening discussions.

J. E. M. Thomson,
Lincoln.

THE ENGINEER AND THE DOCTOR

"The engineer sits in his cab, his engine, drawing its coaches moves smoothly down the track until there cames a whirr, a jarring, a smashing, and the engine being disabled the train comes to a halt, but that engineer does not send for a Christian Science mechanic, an Osteopathic mechanic, nor a Chiropractic mechanic; he sends for a Regular mechanic; that mechanic comes, he is a plain blunt man; there is nothing mysterious about him or his methods. Of course, he is acquainted with every part of that engine even to the smallest detail; he carefully looks through the machinery until he comes to the broken cog, the loosened nut, or the twisted rod, then, in a perfectly sane way, which any child could understand, he repairs the damage and the train moves on."

"When that mechanic arrived at the engine, if he had made use of such language as that found in the teachings of Mrs. Eddy, or, if he had begun osteopathlike to yank at the cow catcher, or like the chiropractor, to rub the back of the engine, the chipmunks and prairie dogs along the right of way would have laughed him off the track."

—Extract from Medi-Cult, The A-B-C of the Medical Profession, by Dr. B. F. Lorance, Auburn, Nebr.

THE NEBRASKA COLLEGE OF SURGEONS POSTGRADUATE COURSE

The Nebraska Section of the American College of Surgeons will hold a post-graduate course in Omaha on February 23rd and 24th. The program will be composed entirely of men outside of the state of Nebraska and will consist of a postgraduate course on general topics which will be of interest to physicians in all branches of medicine. All of the men in this state and in the surrounding territories are cordially invited to attend this meeting. Anyone who desires more specific information is requested to communicate with Doctor W. L. Shearer, 1226 Medical Arts Building, Omaha, Nebraska, who will forward the desired data.

Those who will speak at the meeting are listed:

Doctor F. C. Mann, Rochester, Minnesota.
Doctor T. G. Orr, Kansas City, Missouri.
Doctor Louis J. Hirschman, Detroit, Michigan.
Doctor E. V. Allen, Rochester, Minnesota.
Doctor Arthur Steindler, Iowa City, Iowa.
Doctor V. P. Blair, St. Louis, Missouri.
Doctor F. A. Figi, Rochester, Minnesota.
Doctor Ferdinand C. Lee, Baltimore, Maryland.
Doctor George B. Kent, Denver, Colorado.
Doctor W. E. Lower, Cleveland, Ohio.
Doctor E. H. Skinner, Kansas City, Missouri.
Doctor E. A. Boyden, Minneapolis, Minnesota.

EDITORIAL PARAGRAPHS

We blush some more: "Success to the *Journal*—we cannot help noting with pride, how it is growing in worth and style."

Premedical students, it appears, are now given aptitude tests as one of the normal requirements of admission to medical schools of good standing.

Now, along comes halibut liver oil to claim a place aside of cod liver oil, in vitamine A content and something is said about its being sixty times as potent when given with viosterol.

That this is the land of the free and the home of much stupidity is evidenced by the report of the Public Health Service which states that we had more cases of smallpox during 1930 than any other country, except British India.

In Soviet Russia, abortion is a legalized procedure and government owned clinics employ a specialist who does nothing but induce abortions, often doing a half dozen a day. The mortality following the procedure is said to be very small.

A one thousand dollar scholarship fund in memory of her son, the late Dr. Carl A. Meyer, who died at Newman Grove during the great influenza epidemic, was bequeathed to Nebraska Wesleyan University by Mrs. Martha Torrey Meyer.

We read that the free use of glucose and dextrose solutions per rectum before and after operations is futile and may do harm. No appreciable absorption occurs and it may cause gaseous distension due perhaps to a changing flora in the bowel. We learn, today, only to unlearn the next day.

Auner in the *Journal, Iowa State Medical Society* for December, states that athlete's foot or epidermophyton infection is readily cured by soaking the feet for half an hour each day in a one-eighth of one per cent solution of potassa sulphurata, the ordinary liver of sulphur of another generation.

Dr. Hadley of the University of Michigan seems to have demonstrated the existence of filterable forms of well-known bacteria. He shows that it is possible to get bacteria to change into forms that are invisible under the microscope and can pass through the pores of a porcelain filter. This may change our entire concept of bacteriology.

A new phase of medical organization is being adopted in Otoe county. The medical society has invited the dentists and nurses to associate membership and to make it more appealing they call it the Professional Association of Otoe County. That idea will work well. Another feature is noticed in that society: someone has a vision, for a tentative program for the year 1932 has been worked out.

The annual business meetings of the Councilors and of the Publication Board were held at the Athletic Club, Omaha, on the evening of January 18. The financial statement will appear in the March *Journal*. At these annual meetings the Council decides on the financial and economic program for the ensuing year and the Publication Board goes over its annual financial report and decides matters of policy for the *Journal* for the year.

The United States Public Health Service reports several things of at least passing notice: No smallpox was reported from seven states in 1930—Kansas, Delaware, Rhode Island, New Hampshire, Maine, District of Columbia, Maryland. The tubercular death rate for 1930 was the lowest ever recorded, 68.5 deaths per 100,000 population, while in 1900 the tubercular death rate was 201.9 per 100,000 population. More than 1,450 cases of undulant fever were reported in 1930 and the disease has now been recognized in every State in the Union.

During the year 1931 there has been an abundance of copy furnished to the editor and it has been somewhat embarrassing at times to decide what or which articles to publish next—they all deserved early publication. At the time this is being written the supply is still adequate to carry us over the annual meeting. We mention this for two reasons: that essayists may know that we are doing the best we can to get material published and to let prospective contributors know that we are always glad to get something real good.

Summarizing the indications for the removal of tonsils, the *New England Journal of Medicine* says: "These indications are the presence of scarred, cryptic or ragged tonsils accompanied by persistently enlarged cervical glands; tonsils so large as to be definitely obstructive; persistent mouth breathing due to obstructive adenoids; a history of the rheumatic infections; a history of repeated attacks of sore throat or otitis media or of frequent, severe and prolonged acute upper respiratory infections. In the absence of any of these indications the burden of proof is on the individual who would advise operation."

The American Association for the Study of Goiter again offers an award of three hundred ($300.00) dollars for the best essay based upon original research work on any phase of goiter presented at their annual meeting in Hamilton, Ontario, Canada, June 14th, 15th and 16th, 1932. It is hoped this offer will stimulate valuable research work, especially in regard to the basic cause of goiter. Competing manuscripts must be in English and in the hands of the Corresponding Secretary, J. R. Yung, M. D., Rose Dispensary Bldg., Terre Haute, Ind., not later than March 15, 1932. Manuscripts arriving after this date will be held for the next year or returned at the author's request.

A month ago we said competitive bidding for the purpose of being allowed to care for the county poor is derogatory to the profession and unsatisfactory from every point of view and expressed a hope that no physician would enter a bid. Since then we have learned that on competative bidding the contract in one of our counties having a population of 25,000, a physician was awarded the contract at the following rates: Salary *for the year 1932*, $12.50 (twelve dollars and fifty cents); medicine for the year, $12.50; mileage for country trips to county poor, 10 cts. per mile. Oh, well—the experience will be worth several hundred dollars.

A correspondent sent us the following criticism months ago about an article published during the past year. We now offer it to the reader. The criticism was specific, but applies to other articles and should be a suggestion to authors: "*The Medical Journal*, which came yesterday, had a number of interesting articles. I think the man who wrote the article on —— had a good topic but he wasted several pages saying nothing and then it was time for him to give his conclusions. He had no ideas that were new to anybody, to offer. The article on Trichomonas was more definite than any of the other articles on the same subject which I had read."

At least one physician in Nebraska is endowed with the milk of human kindness. Press reports indicate that a physician in the southern part of the state has offered to care for all needy poor in his section during the winter without compensation. The Lincoln Star, commenting editorially on this proposition, says:

> "It is not believed that the offer should be accepted, but that the county should, in justice, pay for the services rendered its indigent people.
>
> "A duty devolves upon society to provide sustenance, shelter and medical attention for those unfortunates who are without means of their own, and a physician should no more be expected to give of his time and skill without compensation than should a grocer be expected to feed all of the poor or the owner of an apartment house to provide free domicile. It is a community affair and the expense should be shared by the community.
>
> "The care of the indigent should in all counties and communities be upon a business basis and its cost should be as much a part of the budget as the heat-

ing of the court house or the pay of officials. A physician should be no more expected to donate his services than should the janitor of a school house. People who have the benefits of organized society must pay the price."

And the Lincoln Star is correct.

One of the unsolved problems of modern life has been the problem of proper heating, ventilating and humidification of air in the home and business houses. It is now stated that there is no such thing as "fresh air", properly speaking, if the air we breath is properly conditioned. "Air-conditioning for small as well as large homes, including filtering, washing, humidification, heating, cooling and circulation, is to be made available shortly by companies that plan to start mass production and marketing of air-conditioning units. This equipment, simple and fool-proof in operation, and moderate in cost, will give the householder complete control over air conditions in his home regardless of the weather outdoors. Actual tests have shown that filtering and washing removes 99 per cent of germ-laden dust from the air, eliminates "dry kiln" conditions so disastrous to furniture and fabrics, makes the daily dusting habit unnecessary, adds to the family's health and comfort, and in general makes the home more livable and enjoyable the year 'round."

NECROLOGY

Donald A. Macrae, Council Bluffs, Iowa; native of Council Bluffs; University of Michigan Medical School, Ann Arbor, 1891; postgraduate work in Chicago, New York, Vienna, London, Berlin; surgeon in Council Bluffs since graduation; nationally known surgeon; president, Council Bluffs clinic; surgeon to four railroads entering Council Bluffs; former professor of anatomy, Omaha Medical College; professor clinical surgery, Nebraska University College of Medicine, 1901-1912; in command of Mobile Hospital No. 1 at Chateau Thierry, June, 1918; major and colonel, medical corps, U. S. Army; in medical corps Mexican Border, 1 year; first lieutenant, surgeon, Fifty-first Iowa Infantry, Philippine Insurrection, 1898-99; sometime president, Iowa State Medical Society; member, Judicial Council, American Medical Association; former president Missouri Valley Medical Society; Croix de Guerre and Distinguished Service Medalist, U. S. government, account work at Chateau Thierry; former mayor of Council Bluffs; member Nebraska State Medical Association; distinguished son of a noted physician and surgeon whose name he bore; a man of superior surgical judgment, nationally known and interested in general affairs of his city and state; died January 11, 1932, after a week's illness of pleuro-pneumonia, aged sixty-one years.

A widow, son and daughter, survive.

Alfred C. Graham, Auburn, Nebr.; University of Nebraska College of Medicine, 1920; member, Nebraska State Medical Association; practitioner at Auburn for a number of years; died January 3, 1932, as a result of a bullet wound, aged forty years. A widow and daughter survive. He was a brother of Dr. W. W. Graham, Elgin, Nebr.

Ray R. Losey, New York City; native of Madison, Nebr.; University of Nebraska College of medicine, 1918; also a graduate in pharmacy; lieutenant in the medical corps of the navy during the World War; ophthalmologist in New York City since 1919; senior assistant surgeon to New York Eye and Ear Infirmary; attending ophthalmologist at Broad Street, Pan-American, Midtown and Community hospitals; died January 1st, 1932, of cerebral hemorrhage, aged about forty years. A widow and two sons survive.

Edwin B. Hanna, York, Nebr.; Chicago Homeopathic Medical College, 1900; practicing physician at York for thirty-two years; member, Nebraska State Medical Association; died suddenly January 5, 1932, as a result of a fall, his head striking a concrete step, aged about sixty years.

A widow, three sons and a daughter survive.

Bernard A. McDermott, Omaha; Northwestern University School of Medicine, Chicago, 1903; sometime chief surgeon Wise Memorial hospital; in Omaha since graduation; member Nebraska State Medical Association; inactive on account of illness for last several years and away from Omaha undergoing treatment; died January 13, 1932, aged about fifty-two years.

A widow, son and daughter survive.

AUXILIARY NOTES

Mrs. Morris Nielsen of Blair, Mrs. Clyde Roeder, Mrs. Wm. Shearer and Mrs. George Neuhaus of Omaha, as well as Mrs. J. E. M. Thomson and Mrs. Roy Whitham were present at a luncheon given at her home by Mrs. Fred Teal, Lincoln, early in December. Tentative plans were made in regard to the state convention which will be held in Lincoln late this May.

* * * * * *

The Richardson County Auxiliary met on November 18th for dinner at the Hotel Weaver, Falls City, and afterward adjourned to hold their meeting at the home of Dr. J. M. Greene, who gave a short report of the National Convention at Philadelphia. There was read an interesting letter from their President, Dr. H. R. Miner, in regard to the Children's Clinic at Northwestern University.

* * * * * *

From South Carolina comes the following report of worth-while interests: We have 13 auxiliaries and hope our membership will be 200 by spring. All our women are interested in the Student Loan Fund. Hygeia is being promoted for schools and free libraries. Some auxiliaries sponsor free milk stations. Prizes are provided for Nurses' Training Classes in three hospitals. The functioning of the courtesy chairman is deeply appreciated. The increased kindly and get-together atmosphere is most encouraging and helpful.

* * * * * *

Mr. F. V. Cargill, circulation manager for Hygeia, is gratified at the response to the request made by the American Medical Association that the auxiliary promote the distribution of Hygeia through educational agencies.

The auxiliary-promoted circulation of Hygeia has increased more than 50% over last year's record at this time. Most of these were for schools. In this accomplishment Missouri leads the states.

* * * * * *

Those who know personally our national president can well understand the enthusiasm of this paragraph in the Oregon Auxiliary News:

"Friday morning, October 23, Mrs. McGlothlan addressed the annual session of the Woman's Auxiliary to the Oregon State Medical Society. It is impossible to convey the inspiration and assurance which Mrs. McGlothlan brought to those members who were privileged to hear her: But it is planned that an early issue of the Oregon Medical Bulletin will contain a copy of her address so that all may share in her message to Oregon members."

At the Oregon Auxiliary "Stunt Dinner" a prize was given for the best Auxiliary slogan. The award went to "Doctors' Lives Need Doctors' Wives." Can you improve on that?

The auxiliary maintained a booth at the annual convention of the Oregon Congress of Parents and Teachers. Thus was health literature distributed and the circulation of Hygeia promoted.

* * * * * *

Before our national president, Mrs. McGlothlan, went to Kentucky in September, she had been asked to address, not only the Woman's Auxiliary, but the convention of the Kentucky State Medical Association as well. Her address, "Public Health Education," we find printed in full in the November Kentucky Medical Journal along with the address to the same association by its own national president, Dr. E. Starr Judd, of Rochester, Minnesota.

* * * * * *

The value of our organization was officially recognized by the Virginia State Medical Society when, at its annual convention in October, the auxiliary was asked to report with the regular standing committees.

The Virginia Auxiliary has adopted as its work for the coming year pre-natal and post-natal education, and pre-school examinations of children. In the promotion of this laudable program the interest and help of other women's organizations will be enlisted.

The Virginia Auxiliary acknowledges the inspiration and example (from the laity) of Mrs. Mountcastle who instituted, several years ago, the examinations of the school children of Roanoke and the follow-up work to make the examination worth while.

* * * * * *

Here is an item from the Georgia Auxiliary notes that deserves the consideration of Auxiliaries in every state, because they, too, if they desire, may be similarly favored:

"The Metropolitan Life Insurance Company has offered the State Chairman of Health Education, Mrs. Bonar White, 12 sets of film strips, free of charge, for use in the 12 districts. They can be shown on such machines as the Spencer Len Delmeascope, Bausch and Lomb, or Braco and S. V. E. Pictorial."

* * * * * *

The executive board of the State Woman's Auxiliary met at University Club in Omaha, Monday, January 18th. Those present were Mesdames Nielsen, Shearer, Tomlinson, Roeder, Dunn, Rubendall, Minor, Pollard, and Long. Mrs. Wilson of Stuart, a former member of the board called during the business session.

In accordance with a request from the National Auxiliary that our state fiscal year correspond with that of the National Auxiliary, the State Board voted to recommend this change: Chapter V, Section I, to read, "The fiscal year shall be from April 1st to March 31st," instead of "from January 1st to December 31st."

For this reason, the state called for the 25 cents proportionate dues as per the letter sent to county presidents, Nov. 25, 1931. With this accomplished, county, state and national will have the same fiscal year.

It was also recommended that county auxiliaries elect their officers in March and have these officers take their office at end of state meeting. This was recommended so that state officers will have only one set of county auxiliary presidents to work with instead of two as in past years.

* * * * * *

Send clippings from your local papers concerning activities of your auxiliary to our Historian, Mrs. Clarence Rubendall, Fairacres, Omaha, Nebr.

* * * * * *

Send as early as possible, report of each auxiliary meeting direct to State Publicity Chairman, Mrs. Roy H. Whitham, 1530 S. 22nd Street, Lincoln, Nebr.

* * * * * *

From the A. M. A. Bulletin:

"Every fellow of the American Medical Association receives the Journal. He also receives the Monthly Bulletin which carries National Auxiliary news. If your husbands do not bring the Bulletin home, you may subscribe for it yourself, since it will be sent to any address for fifty cents per year."

* * * * * *

"The doctor's wives of Kentucky 'always to the fore-front' as Mrs. Freeman expressed it, have issued a Supplement to the Kentucky Medical Journal. A Quarterly, financed by the auxiliary, will bring to every member a report of national, state and county activities. Each issue will tell the achievement of a member of some doctor's family. Congratulations from Nebraska Auxiliary members and best wishes for success to this enterprise."

* * * * * *

It is hoped that County Auxiliaries will avail themselves of this opportunity for health education and disease prevention. Among the 12 subjects are "No More Diphtheria," "How to Live Long," "Lives of Health Heroes," all especially suited for high school as well as adult audiences.

—Mrs. Roy H. Whitham, Lincoln.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society** was held in the Medical Arts Auditorium, Tuesday, December 8, 1931.

Meeting called to order by Dr. Pinto.

After discussion the following resolution, approved by the council, was adopted:

Any member of the Omaha-Douglas County Medical Society who engages in free examinations sponsored by organizations without the endorsement of this society shall be guilty of professional misconduct and subject to investigation by the Board of Censors.

Also any member who willingly allows his name to be listed in any publication not approved by the Omaha-Douglas County Medical Society shall be guilty of advertising and be subject to investigation by the Board of Censors.

This Resolution goes into effect January 1, 1932.

The first number on the scientific program was "The Treatment of Chorea" by Dr. Floyd S. Clarke, who reported a case of choreic child treated with typhoid vaccine. This was discussed by Drs. H. B. Hamilton, J. E. Summers, G. A. Young, J. C. Iwerson, H. M. Jahr, A. S. Rubnitz and A. S. Pinto.

Dr. Francis W Heagey presented the second paper, "Professional Attitude Toward Consultation."

—Abstracted from the Bulletin.

The **Seward County Medical Society** met in Seward, December 17, 1931. All members were present. A very nice dinner was enjoyed at the Windsor Hotel. Following the dinner the annual election of officers was held. The present officers were reelected: Wm. Sandusky, Seward, president; H. J. Wertman, Milford, vice president; Lloyd Ragan, Seward, secretary-treasurer; H. D. Clarke, Seward, delegate.

Dr. H. D. Clarke read an interesting paper on "The Physician: An Expert Witness." Dr. Lloyd Ragan read a paper on "Rheumatic Fever and Chorea in Childhood." Both papers were followed by a round table discussion.

—Lloyd Ragan, Secretary.

The **Otoe County Medical Society** met at St. Mary's hospital, Nebraska City, January 11, under the presidency of Dr. D. D. Stonecypher.

The subject for this meeting was "Upper Respiratory Infection" and was presented to the society by Dr. Wm. L. Shearer and Dr. Rodney Bliss of Omaha in a very instructive and pleasing manner.

Dr. Shearer spoke on the relationship of dental infection to upper respiratory disease and called especial attention to apical dental infection in the causation of maxillary sinus pathology. He gave many valuable points on the proper management of these cases.

Dr. Bliss discussed the cause, symptoms, effects and treatment of the common cold. He stressed the importance of lowered resistance in the causation of this malady and its sequelae. He spoke of the ways in which resistance is lowered and also of the means of raising and maintaining such resistance.

Dr. Douglas Hansen of Nehawka and Dr. A. R. Kintner of Nebraska City presented a case of Tularemia. This case report was extremely interesting and many points of historic and diagnostic importance were mentioned.

This was the first meeting of the newly formed Professional Society composed of physicians, dentists and nurses of Nebraska City and neighboring towns and was very largely attended by each group.

—H. B. Morton, Secretary.

The **Richardson County Medical Society** and the **Auxiliary** met for a joint dinner at the Hotel Weaver, Falls City, December 17. The following officers were elected: Dr. O. F. Lang, president; Dr. C. F. Hustead, secretary-treasurer. A talk on the digestion of milk and food value of milk was given by Dr. H. R. Miner.

The **Saline County Medical Society,** at Wilber, Dec. 21, elected the following officers: Dr. A. C. Blattspieler, Tobias, president; Dr. R. C. Kirchman, Wilber, vice president; Dr. R. K. Johnson, Friend, secretary-treasurer; Dr. R. C. Kirchman of Wilber and Dr. A. A. Conrad of Crete, delegates to the state meeting. Dr. Kirchman has been secretary-treasurer of the society for the past three years.

The **Custer County Medical Society** held its regular monthly meeting at the Arrow hotel, Broken Bow, January 1. A seven o'clock banquet at which the wives of the members were present preceded the meeting. Dr. C. L. Mullins is president of the organization and L. W. Forney of Mason City is secretary-treasurer.

The **Hall County Medical Society** closed the year's activities by a banquet at the beautiful new Gunn restaurant. Election of officers for the coming year was as follows: Dr. J. V. Reilly, president; Dr. James P. Rigg, vice president; Dr. Amil J. Johnson, secretary.

The chief discussion for the evening was in regard to ethical advertising. The consensus of opinion was that the ethical advertising suggested by the press was not desirable.

—Amil Johnson, Secretary.

Monday evening, January 11th, the medical men of **Dawson County** and the **Women's Auxiliary** held a union meeting at the Smith Cafe, Gothenburg, with Dr. John L. Nilsson of Omaha, chief surgeon of the U. P. R. R., as guest speaker.

Following a sumptuous turkey dinner, Dr. Nilsson gave an illustrated lecture, using moving pictures, on the treatment of fractures and on the subject of caesarean section. Thirty years of almost miraculous success in a field affording unlimited experience, the battlefield and the dangers incident to life's routine of labor—has given Dr. Nilsson the technic and skill of a master artist, who has lost none of the human touch.

Both the medical association and the auxiliary rose in an expression of deep gratitude to Dr. Nilsson for his splendid work.

Lexington, Cozad, Farnam, Eustis and Overton, as well as Gothenburg, were represented at the meeting. Dr. Rosenberg of Lexington, a charter member of the association organized at Gothenburg in January, 30 years ago, was guest of honor.

Officers elected for 1932 were: Dr. Ray Wykoff, Lexington, president; Arthur W. Anderson, Lexington, vice president; Dr. T. Y. Dorwart, Lexington, secretary-treasurer; Dr. W. J. Birkofer, Gothenburg, delegate.

—Mrs. W. J. Birkofer.

The December meeting of the **Cheyenne-Kimball-Duel County Medical Society** was held in Kimball at the offices of Drs. Mockett and Everett. Dr. Mockett gave a very interesting talk on the Medical, Social, and Economic Conditions in Russia based on his trip there last summer. A fee schedule was agreed upon and adopted.

The January meeting was held in Sidney at the offices of Dr. D. L. Abbott, the retiring president. Dr. Cooper of Scottsbluff was the guest speaker of the evening. His subject was "Your State Medical Association." Dr. Wm. Taylor of Omaha, who was unable to attend personally, was kind enough to mail his paper on "Obstetrics" which was very instructive and appreciated by all present. The following officers were elected for the year 1932: J. B. Pankau, Dalton, president; J. R. Taylor, Sidney, vice president; A. R. Everett, Kimball, secretary-treasurer; A. L. Miller, Kimball, delegate.

—A. R. Everett, Secretary.

HUMAN INTEREST TALES

Dr. John F. Gardiner, Omaha, has gone to San Antonia for special clinics.

Dr. D. W. Bell has resumed practice at Blair after an absence of about a year.

Dr. C. H. Campbell, Columbus oculist, submitted to a gallbladder operation in Omaha in December.

Dr. F. J. Wearne, Omaha, spoke to the South Omaha Women's club on his travels in Egypt, recently.

The Dr. A. F. Jonas family, Omaha, has gone on a Mediterranean cruise and will sojourn in Egypt until about May.

Dr. Thomas L. Gritzka, who has been ill at Silver City, N. M., is convalescing at the home of his parents at Talmadge.

Dr. Dee L. Abbott, Sidney, has become afflicted with ptosis of both eye lids and recently was reported in Denver for treatment.

Dr. Edward Albert, graduate of the University College of Medicine has been chosen head of the receiving ward of the Cincinnati General hospital.

Dr. Paul Crossland, whose family home is at Wayne and who has finished an interneship at San Diego Naval hospital, is about to locate at San Pedro, Calif.

Dr. William McTaggert, former Columbus boy, who has been practicing in New York City, has returned to Nebraska and will engage in practice at North Bend.

Dr. Nora M. Fairchild has returned to Omaha after an absence of something over a year spent in India doing special work on cataracts and visiting European eye clinics.

We regret to record the death of Mrs. A. J. Cameron, wife of one of our vice presidents. The sympathy of the profession goes out to Doctor Cameron in his great loss.

Dr. R. H. Foster, of Anguilla, Miss., visited his brother in Omaha during the holidays. Dr. Foster was sometime physician at Norfolk State Hospital and later was for a time in practice at Tilden.

Dr. Paul Royal of Green Gables Sanitarium, lost his father, Dr. George Royal of Des Moines, recently. Dr. Royal, senior, has been an outstanding man in Homeopathic medicine, had been president of the American Institute of Homeopathy and dean of the Homeopathic Medical Department of the Iowa State University during the last years of its existence.

BOOK REVIEWS

PRIMER ON FRACTURES, Second Edition (Second Printing), prepared by the Cooperative Committee on Fractures of the American Medical Association. Price $1.00. American Medical Association, Chicago.

This work may be described as an atlas of the care of fractures and the drawings and legends thereto are so lucid that anyone may understand at a glance. Every one of the 150,000 physicians of the United States should own a copy of this Primer of Fractures.

A SURVEY OF THE MEDICAL FACILITIES OF SAN JOAQUIN COUNTY, CALIFORNIA, 1929, by Nathan Sinai. D. P. H. University of Chicago Press. Price $1.00.

As indicated by the title this is a survey and statistical analysis and presentation, complete in every detail. It is a part of the study on the cost of medical care. It is a very valuable presentation; but its principal interest to the casual reader is the chapter on The New Country Doctor, from which a paragraph is quoted:

"A new country doctor and a new rural practice have evolved. The new country doctor does not suffer by comparison with either the old country practitioner or the new city specialist. He is a product of the modern school of medicine, and, while the quality of his service is at least equal to that of his predecessor, his own satisfaction in supplying the service is probably greater. In spite of the new country doctor's demand that he receive fair payment for services rendered, he is held in esteem as high as that accorded the old country doctor. This esteem is based not only on the fact that he generously renders free service when necessary but also that he renders good service."

COURTS AND DOCTORS, by Lloyd Paul Stryker. 236 pages, 8 mo., cloth cover. The MacMillan Company of New York, publishers. Published January 26th, price $2.00.

In this book, the author, for many years general counsel for the Medical Society for the State of New York and having personal charge of the legal policy of the society and the defense of its members who were sued for malpractice, offers advice and counsel that will be instrumental in protecting the doctors against unwarranted attack upon their professional character.

CHOLECYSTOGRAPHY

Sherwood Moore, St. Louis (*Journal A. M. A.*, Dec. 27, 1930), concludes on the basis of his experience that intravenous cholecystography is the most accurate method now in use to determine the condition of the gallbladder. Oral application of the test is valuable to prove the organ normal and to determine the existence of cholesterol stones and deformities of the gallbladder. Nonvisualization and faint visualization of the organ with the oral method should be confirmed by an intravenous test. With the intravenous method, the pathologic examination of excised gallbladders shows a high degree of accuracy for the preoperative diagnosis. Errors in preoperative diagnosis are found chiefly in the cases of pericholecystitis, and possibly in exambles of cholesterosis of the gallbladder (there have been no examples of this). In view of the fact that only 58 of 220 cases of stones were demonstrated preoperatively, the percentage is so low that the discovery of stones cannot be thought to be a valuable property of cholecystography. Therefore, a radiographic examination of the gallbladder region should precede cholecystography. Normal cholecystographic behavior can occur with both calcified stones and cholecterol stones, but this behavior is exceptional. It can also occur with extensive pericholecystitis. Such observations are not sufficiently frequent, however, to constitute an indictment of the usefulness of cholecystography in the diagnosis of cholecystitis and its associated pathologic conditions.

INDISPENSABLE USES OF NARCOTICS

Morris Fishbein, Chicago (*Journal A. M. A.*, March 14, 1931), presents the introduction to a series of articles on the indispensable uses of narcotics that are to be published in The Journal and then republished in book form. He believes that the problem of narcotic addiction merits the attention of physicians for many reasons. The control by statute of the prescribing of alcohol, and the definite limitations of the amount prescribed, indicates that the medical professsion must do everything possible to minimize the prescribing of narcotics in order to make unnecessary further restrictive measures. Physicians should give more serious consideration to the materia medica, pharmacology and therapeutics of narcotics. Physicians may, by the exercise of more thought in practicing, do much to avoid censure in relation to narcotic addiction. They may substitute, whenever possible, nonhabit-forming drugs in the place of morphine or other opium alkaloids. When narcotics are indispensable.

however, as shown in this series of articles, no more should be administered than is necessary to achieve the desired end. Patients requiring daily administration should be seen often by the doctor and the amount of drugs ordered or supplied should not exceed that required by the patient until seen again. Independence of administration on the part of nurses should be strictly limited to prescription and any change in treatment should be in writing. The patients should never be informed of the nature of the drug used, nor of the dose of drug administered. The patient should never be permitted to administer the drug hypodermically to himself. Use of the drug should be discontinued immediately when no longer required, and if craving has resulted, close supervision and appropriate treatment should be maintained until the patient has been rendered independent of the drug.

SPRUE

Anthony Bassler and J. Raymond Lutz, New York (*Journal A. M. A.*, Dec. 27, 1930), report their experiences with ten consecutive cases of sprue treated by them. There are essentially four methods of treatment: High liver diet (with or without excess vitamins); transduodenal lavages; correction of an intestinal infection, and living for a time in colder climates. Blood transfusions, injections of iron preparations and the types of diets formerly in use did not produce worth-while results in their hands. The blood pictures found in sprue together with the frequent presence of achylia gastrica suggested to them the use of a similar diet in sprue. In all the suggested diets, liver was taken as food, and not in the form of extracts. Although the low carbohydrate diet has been of distinct service, the additions of liver and vitamins enhance its value. Blood transfusions have been disappointing. In treatment, the best plan is the combined one of high liver diet with fruits, vegetables and milk product additions, transduodenal lavages, biologic intestinal treatments, and residence in colder climates. Similarity of the response of the sprue cases on this type of dieting to that of pernicious anemia is noticeable, excepting that the proportion of success is higher and the results more substantial than in pernicious anemia. In the ten cases of sprue reported, results from treatment were successful in all but a lethal case, one too far advanced for carrying out treatment or expecting a response.

"Now, remember, you won't like this doctor so much, at first. He won't act as if he thinks you are in a very bad shape."

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Homer Davis, Genoa	1934
D. D. King, York	1934
H. E. Potter, Fairbury	1931
W. J. Douglas, Atkinson	1931
R. D. Bryson, Callaway	1932
L. W. Rork, Hastings	1932
C. A. Selby, North Platte	1932
A. L. Cooper, Scottsbluff	1932

DELEGATES TO THE A. M. A.

B. F. Bailey, Lincoln	1933
R. W. Fouts, Omaha	1932

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

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CONTENTS

Page
Some Aspects of the Physiology of Bone, Carl A. Dragstedt, Ph. D., M. D. 93
Mantoux Observations in 520 Indian Children, Homer Davis, M. D., F. A. C. P. 98
The Etiology and Mechanics of Massive Atelectasis, Ephraim Korol, M. D. 101
Obstruction of the Small Intestine Due to Benign Granuloma, Clayton Andrews, M. D., F. A. C. S. 106
The Management of the Child With a Defective Heart, Herman M. Jahr, M. D. 109
Health Program in the Public Schools, Elizabeth Ash Langfield, M. A. 113
Principles Underlying Reduction of Pain in the Postoperative Phase of Anorectal Diseases, R. Russell Best, M. D., F. A. C. S. 115
Councilor Annual Meeting Nebraska State Medical Association 117

EDITORIAL—

The Robert Koch Anniversary 122
Annual Meeting Papers 122
Page
Annual Dues 122
Nebraskans' Contribution to the Chiengmai Leper Asylum 123
The Nurse on Horseback in the Kentucky Hinterland 124
Social Medicine and the Medical Profession 124
Thrombosis of Lateral Sinus 125
Most Governments Are Inefficient or Corrupt—Some Are Both 126
The Coming Meeting of the Medical Society of the Missouri Valley 127
Statement of Just What Was Done With Each Member's $8.00 During 1931 127
Dermatologic Hint No. II 127
Obstetrical and Gynecological Hints. No. II 128
Editorial Paragraphs 128
Necrology 130
Auxiliary Notes 130
The Societies 131
Human Interest Tales 132

SOME ASPECTS OF THE PHYSIOLOGY OF BONE*

CARL A. DRAGSTEDT, Ph. D., M. D.,
Chicago, Illinois.

(From the Department of Physiology and Pharmacology,
Northwestern University Medical School).

The observed relationship of the parathyroid glands to calcium and phosphorus metabolism, of vitamin D to rickets and osteomalacia, and of a possible interrelationship between the parathyroid glands and vitamin D have served as the stimulus for a great amount of experimental and clinical investigation of the factors that influence the physiology of bone. Prior to the development of this information, the subject of the physiology of bone has for the most part been neglected by physiologists and biochemists, and we owe to the anatomists, pathologists and surgeons the greater part of our knowledge of the structure, function, and disease of bone.

Everyone knows that the bones are made up largely of calcium phosphate and carbonate. The methods of analytical chemistry long ago demonstrated that calcium carbonate and phosphate exist in very precise proportions in the skeletal structures of all mammals and in the shells of invertebrates. The arrangement of these elements in normal bone has been, however, the subject of considerable dispute. Recent evidence from the examination of spectrograms obtained by passing x-rays through samples of bone and various calcium salts adds weight to the prevailing view that it is a combination of calcium carbonate and tertiary calcium phosphate similar to the natural mineral dahlite. The essential constituents, calcium and phosphate, are found dissolved in the blood in remarkably constant amounts, and we may infer that these substances have been absorbed from the intestines and are on their way to the skeleton to form new bone. During the entire growth period, this transport of calcium and phosphorus continues and some mechanism provides for their conversion into the hard white crystalline calcium phosphate in tissues which require structural support.

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*From a paper presented before the Lancaster County Medical Society, March 17th, 1931.

With respect to the mechanisms of bone formation Bancroft has stated that it is advisable to accept some practical working theory that will cover all types of bone formation. This theory should be broad enough to cover not only the skeletal bone formation but also the extraskeletal bone formation that occurs in so many places in the body. Extraskeletal bone formation occurs in one or more tissues in all of us if we live long enough, and it may be produced experimentally in animals without difficulty. Extraskeletal bone occurs frequently in man in the arterial wall and in the muscles. It has been described as having been found in nearly all of the tissues of the body, such as the lymph nodes, ovaries, kidneys, fascial planes, and wall of the orbit. Experimentally, bone has been produced in animals by ligating the vessels of the kidney and wrapping the omentum about it. Microscopic sections of this kidney from one to two months later show areas of true bone and calcification occurring in the parenchyma. Neuhoff, working in the laboratory of surgical research at Columbia University, found bone almost universally in fascia lata transplants that he had made to fill a defect in the bladder. This observation has been confirmed by a number of workers. Any theory, therefore, that we may accept should be broad enough to explain these irregular types of bone formation as well as the repair of bone following fractures and infection. We may, for the sake of discussion, classify the theories of bone repair roughly into three groups: (1) periosteal, (2) osteoblastic, and (3) extracellular deposition of calcium salts.

1. The periosteal theory presupposes that the periosteum and endosteum are definite organs for bone formation and repair, and that the bone cells arise from them and from no other source.

2. The osteoblastic theory may be divided into two subtitles:

Type A. This assumes that in bone repair following injury, bone cells are liberated from their lacunae and that they reproduce and form new bone.

Type B. This assumes that following injury wandering connective tissue cells, fibroblasts, are drawn into the area of trauma. Owing to the stimulus of the repair, they are transformed into bone producing cells and then become specific cells.

3. The extracellular deposition of calcium salts theory assumes that there is no definite bone producing cell; that following injury, possibly by positive chemotaxis, calcium salts in the proportions usually found in bone are deposited in the extracellular framework of connective tissue and that the connective tissue cell then becomes a bone cell by functional adaptation.

Any one of these three theories may explain the ordinary repair of bone as seen in fractures; but it is difficult to explain under the periosteal theory the formation of extraskeletal bone.

The bone in fascia lata transplants in the bladder found by Neuhoff cannot be explained by the periosteal theory, and it is difficult to explain it if we assume that the osteoblast is a specific cell coming from other bone cells. Moreover, it is impossible to explain the formation of bone in the arteries of human beings, in the lymph nodes or in the kidney by either of these theories. If we assume that bone is formed by metaplasia of connective tissue cells into osteogenetic cells or if we assume that it is purely a chemical deposition in living connective tissue, we may explain the phenomenon very easily. This latter view which Bancroft and others incline toward is similar to that emphasized by Le Riche and Policard in their very interesting monograph. Bone metaplasia in a connective tissue area presents in general three phases: (a) The connective tissue becomes edematous and tends to revert to an embryonic state. (b) In this prepared connective tissue there occurs an infiltration of a special nature (pre-osseous infiltration). (c) This pre-osseous substance is impregnated with calcium salts and becomes hard. Bone is then formed. They speak of the first phase as the creation of an ossifiable medium, of the second as an infiltration with pre-osseous substance and of the third as the deposition of calcareous material.

I mention these views particularly to call attention to the changing conceptions of the processes of osteogenesis rather than to form the basis for any discussion of this aspect of the problem. What I want to discuss more in detail are some of the factors that influence the processes of bone formation, even though the ultimate interpretation of these will necessarily await the clarification of the nature of the osteogenetic process itself.

The most important factor influencing bone formation would seem to be the chemical composition of the blood with respect to the elements comprising bone. It is beyond the scope of this paper to discuss the intricate and highly efficient mechanism which maintains a uniform physical and chemical composition of the blood, although it must constantly serve as a carrier of food and building material to the body cells and of waste products from these cells to the organs of excretion. Such a constant composition is necessary. The more specialized cells have become so dependent upon an unvarying environment for normal function that any marked alteration in the chemical or physical structure of the blood or body fluids causes a serious disturbance. The calcium in the blood in health is maintained at a constant level of 10 to 11 milligrams and the phosphate during childhood at 5 to 6 milligrams per cent. Much remains to be learned concerning the mechanism which regulates so nicely the amounts of these bone building materials in the blood and at present only the outlines have come into view. The source of these materials is obviously the food and at first glance it might quite reasonably be expected that an increase or a decrease in the amount of calcium and phosphate in the diet would be reflected in the level of these substances in the blood. The failure to discern any such change with alterations in the chemical content of the food might have surprised the medical investigator were he not by this time so accustomed to these biological perversities. Variations, however, do occur in disease and the devious way these are brought about forms one of the most extraordinary stories in modern medicine.

As early as 1650 Glisson described a disease occurring in infants and children, a disease now known as rickets, and characterized chiefly by a failure of deposition of lime and phosphate in the bones. As a result they remain soft and yield to the stress of weight bearing and muscular tension. Various deformities such as bow-legs, abnormalities in the shape of the chest, head, and pelvis soon develop and often persist.

Little was learned of the essential disturbance in rickets until modern science developed a method for making quantitative measurements of the exceedingly small amounts of calcium and phosphate in blood. The first disappointment at learning that the amount of calcium in the blood in rickets is normal was quickly followed by satisfaction when it was discovered that the amount of phosphate is greatly reduced. Here was a demonstration in chemical terms of the proximal cause of the disease—calcium phosphate, the stone-work of the bone was not formed because one of its elements was deficient in the blood. The next step came from attempts to produce the disease in the experimental animal. Here we find a vivid example of the unification of science, the benefit derived from advances along the entire front. Students of nutrition had already fairly well in hand an outline of the various essential elements in an adequate diet and the technique for studying the effects of absence of one of these elements was well developed. It was soon found that two dietary defects are necessary to produce rickets in young animals. There must be an abnormal proportion of calcium and phosphorus in the food and this must be accompanied by an almost complete lack of an organic substance called vitamin D. Surprising to those who had hoped to produce calcification of the rachitic bones by feeding calcium, it has been found that an excessive amount of calcium and a greatly lessened amount of phosphorus in the diet most readily produce experimental rickets. The excessive calcium in the food probably combines with the phosphate forming the difficultly soluble calcium phosphate and thus prevents it from being absorbed. Vitamin D is a constituent of certain natural foodstuffs such as animal fats, butter, and the yolk of eggs, and is peculiarly abundant in cod liver oil. If young rats are placed on a diet of high calcium and low phosphorus content and lacking in vitamin D, but which in all other respects is an adequate food for them, in a few weeks they develop all of the symptoms of human rickets. If then a small amount of cod liver oil be added to the diet, in spite of there being almost no phosphorus in the food, the phosphate in the blood rises to its normal value and normal calcification of the bones occurs. Cod liver oil contains therefore in vitamin D, a substance necessary for the maintenance of the normal amount of phosphate in the blood.

Recent investigation has added a second factor as important as the diet in the cause of rickets. Those who produced experimental rickets with the food previously described were successful largely because they worked literally in the dark. It has been lately found that the rays in the ultra-violet portion of the sun's spectrum prevent and cure rickets quite as effectively and apparently in the same way as cod liver oil. Thus, if rats rendered rachitic by diet are placed in direct sunlight for several hours daily, there occurs the same restoration of the lowered blood phosphate and calcification of the rachitic bones as would be produced by adding cod liver oil to the diet. So that we have for contemplation the spectacular fact that the same correct adjustment of phosphorus metabolism secured by the ingestion of cod liver oil may be obtained by simply letting sunlight fall upon the skin.

Some of the most interesting experiments illustrating the effect of the concentrations of calcium and phosphorus upon ossification are those of Shipley and his coworkers on calcification in vitro. They showed that when the cartilage and bone of rachitic animals are incubated in normal serum or various saline solutions providing adequate amounts of calcium and phosphorus, calcification can be demonstrated. They concluded that it is obvious that the disturbance (in this case rickets) is not primarily in the bones. They do not calcify because the substances necessary for this do not reach them in sufficient concentration.

The amount of calcium in the blood in health is maintained at a constant level of 10 to 11 milligrams per 100 cc. and within wide limits is independent of the supply of calcium in the food. Like the phosphate, the regulation of the blood calcium at this exact concentration is dependent upon the supply of a specific organic substance in equally minute amounts. In this case, however, the source of the substance in question has been found to be the body itself.

The experimental physiology of the past fifty years has brought into view a number of organs, such as the thyroid gland, the suprarenal, and the pituitary body, which perform their chief function by means of specific chemical substances which they manufacture and then secrete into the blood. The parathyroid glands, four minute structures closely associated with the much larger thyroid gland, on either side of the windpipe, belong to this group. Before their presence and significance was appreciated, they were occasionally removed by the surgeon in operations for the cure of goitre. Carefully controlled experiments such as are only possible on the lower animals, long ago proved that these glands, though only about the size of a pea and in all weighing about 7 grains, perform a function necessary for life. Their complete removal invariably causes death in severe convulsions within a period of three to five days. Careful chemical analysis reveals the interesting fact that shortly after the glands are excised by a surgical operation, the amount of calcium in the blood decreases to almost one-half of the normal. This sudden alteration in the composition of the blood is largely responsible for the disturbance in the nervous system made manifest by the appearance of convulsions. It is the nervous disorder that kills. A gradual destruction of the parathyroid glands such as may occur in disease or may be duplicated in an experiment devised for this purpose may result in such a slow alteration in the composition of the blood that convulsions do not appear. Apparently, given time, the nervous system can in part adapt itself to the changed environment. It is under these conditions that a more specific defect appears which like that in rickets consists essentially in the failure of deposition of calcium phosphate in newly forming bone and teeth. Defects in the dentin appear and broken bones do not heal. We may then infer that the parathyroid glands, insignificant though they appear, perform a most necessary function in regulating the level of the blood calcium and so indirectly in the formation of normal bone.

After numerous failures, investigators have been finally successful in securing from the parathyroid glands of cattle a specific chemical substance in water solution that can compensate for the removal or destruction of these glands in other lower animals or man. It may therefore be concluded that the glands perform their normal function through the manufacture of this substance called the parathyroid hormone, which they secrete into the blood stream. This hormone has not yet been prepared in chemically pure form but available evidence indicates that exceedingly minute amounts are all that is necessary to restore the blood calcium to its normal level. Indeed somewhat larger amount increase the concentration of calcium above the normal and bring about the removal of calcium phosphate from the bones. It seems likely that under normal conditions the parathyroid glands secrete into the circulation exactly the necessary amount of their specific principle to maintain the blood calcium at the level which provides the optimum fluid environment for the body cells and at which calcium can be transported from the intestines to the bones. It is not improbable that the activity of the glands in their turn is in some way dependent upon the concentration of blood calcium. In disease this nice balance is disturbed and variations occur in two directions. When the glands are partially destroyed or their secretion diminished from some other cause, the blood calcium is lowered. a more or less severe excitation of the nervous system results and a defect in the growth of bone. An increase in the secretion of the parathyroid hormone occurs as a result of the growth of tumors consisting of parathyroid tissue. The blood calcium is maintained at an abnormally high level. symptoms of nervous and muscular depression are evident and the bones become rarified and brittle through the loss of lime salts.

There seems to be considerable interrelationship between the vitamin D content of the diet and the activity of the parathyroids so that we cannot entirely separate the influence of the former on the phosphate level from that of the latter on the calcium level of the blood. The intricacies of this relationship, however, would carry us too far afield in the present discussion.

Thus far we have been concerned only with the factors, strange though they be, which bring about a constant optimum concentration of bone building materials in the blood, make possible their absorption from the intestines and transfer through the body fluids to the bones. The manner of the deposition of this calcium phosphate in the structural formation of adult bone presents far more difficult and interesting problems. Everyone is aware of the tubular structure of the long bones and realizes that a hollow cylinder is, for the same amount of material, many times stronger than a solid one. It is only with the x-ray. however, that one can appreciate the extraordinary accuracy of design in the internal architecture of bone. In the x-ray photograph, one can see struts and cross beams of dense calcium phosphate arranged with marvelous precision to sustain the usual stresses of weight bearing and muscular tension. In the thigh bone for instance, these interlacing septa which make a sponge-like structure at both ends are found to coincide exactly with the lines of stress which mathematical calculation shows this bone is subjected to by the weight of the body. The arrangement of the stone-work used in the construction of bone is to the smallest detail mathematically correct.

This architectural perfection which an adult bone presents is the result of a long and intricate process of development and is moreover susceptible of constant change. In the case of the long bones, growth takes place chiefly near the ends of the shaft. Here we find traversing the bone a thin zone of richly cellular tissue, the epiphyseal line, and on either side a region of cartilage in which the cells are more and more widely separated by a stiff gelatinous intercellular substance. The cells in the narrow zone have the almost unique capacity of removing the soluble calcium phosphate from the blood and depositing it in the solid form in the neighboring cartilage. The factors which determine the laying of this stone-work of bone in the intricate pattern so admirably suited to its purpose are entirely unknown. Conceivably lines of stress appear in the more fluid cartilage which in some way facilitate the precipitation of lime salts. The ability of these cells to form bone is not a necessary function of their location. Various malignant tumors of bone arise in which these cells predominate. As the tumor increases in size, numbers of the cells escapes and float away in the blood stream to come to rest finally in some distant organ such as the lung, liver, or heart. At this new site the cells may grow and produce bone. The experimenter has succeeded in duplicating this natural phenomenon by the transplantation of growing bone to various tissues (chiefly muscle and skin).

However, while these transplants into the soft tissues yield a type of bone that may be accurately identified by its microscopic structure, it presents certain very distinct differences to bone in the normal location. It never develops the internal arrangement of trabeculae characteristic of bones sustaining stress and is finally more or less completely reabsorbed. A section of bone transplanted to fill out an accidental or experimentally produced defect in bone. however, may take and later when subjected to weight bearing, develop a new alignment of its internal septa in harmony with that of the neighboring bone. After a time so accurately does the new bone amalgamate with the old that even an x-ray photograph cannot detect the site of the defect.

The readjustment of the internal structure of bone to meet altered lines of stress is dependent upon living bone cells scattered diffusely throughout the hard lifeless matrix. Each cell though isolated from its neighbor by dense intervening bone receives a common blood supply by way of minute connecting tunnels. If these cells are killed by infection, by interference with their blood supply, or by exposure to radium, the calcium phosphate in the vicinity becomes static and can no longer be shifted about to suit an altered function.

There has been some interesting work done during the past several years on certain enzymes, called phosphatases, the exact significance of which is not clear. Enzymes which have the property of hydrolyzing organic phosphoric esters with the liberation of inorganic phosphate have been found in bone and ossifying cartilage while they are absent in cartilage in the early stage of bone development prior to ossification. These facts together with certain variations in the phosphatase content of the blood in various diseases of the bone suggests rather strongly that they may be concerned to some extent in the processes of ossification. The fact that the kidney contains unusually large amounts of this enzyme and at the same time is singularly prone to heterotopic ossification may support this view. It may be that these and other enzymes are the tools with which the bone cells operate.

There is thus ample evidence that although ossification may be conditioned by certain adequate or optimum concentrations of calcium, phosphorus, vitamins or enzymes, there are local mechanisms capable of modifying it to a great degree. Le Riche is convinced that periarterial sympathectomy either by virtue of the change in circulation or the effect of the removal of the nervous influence has a significant effect on ossification. Other workers have demonstrated a stimulation of bone repair by venous stasis. A mere examination of the roentgenograms of the case of osteosclerosis described by Lewin is apt to convince one of the feasibility of affecting these local mechanisms through some localizing nervous method of control in spite of the great amount of experimental work supporting the idea that the processes of ossification are independent of nervous control.

To summarize, it seems possible to group the factors that influence bone formation into two groups, the one general or systemic factors concerned principally with the maintenance of an adequate supply, concentration, and availability of the bone forming salts in the blood stream, the other group influencing more or less directly the local process of osteogenesis. That various abnormalities in these general factors impair the regeneration of bone, and that the correction of these abnormalities will restore bone repair to normal, seems definitely established. There does not appear to me, however, to be any definite evidence that anything in the way of stimulated or augmented bone formation can be accomplished by attempts to improve these general factors. There is no evidence that hypercalcemia, hyperphosphatemia, hyperparathyroidism, hypervitaminosis, etc., will accelerate bone formation. The available evidence indicates that the opposite effect is more likely. On the other hand, the local process of ossification seems to be influenced by factors of use and disuse, blood supply, nervous influence, enzyme activity, etc., in ways that we do not understand. It is suggestive, however, that most of the demonstrated successes in augmentation of bone growth fall in this group. Perhaps if we can ask ourselves the right questions about these local factors, we may find fields for much fruitful investigation. I should like to close with the following paragraph from Le Riche and Policard:

"The problem of osteogenesis has passed through many phases. It has been histological, and surgical, and at the present time is above all chemical. It is useless now for the histologists to repeat what has been done so many times, and for the surgeons to experiment on the periosteum, on grafts, and on the osteogenesis of repair. It is now the turn of the chemists and physicists. They alone can open up new horizons by giving us some of the certainties we lack. When they have solved certain pending questions, it will be possible to resume with profit the studies of the past. We can then progress, and, perhaps, have bone formed at will, accelerate the union of fractures, and prevent the pathological and physiological rarefactions of bone."

MANTOUX OBSERVATIONS IN 520 INDIAN CHILDREN*

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A study of the tuberculin reaction in a series of Indian children was made to determine those in whom some tuberculous infection was present, and also to give us a better understanding of the general health conditions of the Indian child. This study was begun in October, 1930. The Indian children who were given the test were pupils attending the U. S. Indian School at Genoa, Nebraska. The test was made in conjunction with the routine physical examination required on entrance to the school. The children were of the average type, all living in the usual manner at school, attending classes, and receiving instruction in one of the manual arts. All sleep in rooms or dormitories with other children. The individual beds are widely spaced, and the rooms well ventilated.

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The Mantoux or intradermal tuberculin reaction was selected for the skin sensitization test as the general concensus of opinion is that this test is more exacting. The method consists of introduction of 0.1 cc. of a solution of a dilution of 1 to 1000 of Old Tuberculin into the layers of the skin, so that in injection a bleb in the skin is formed. Probably the most universal form of tuberculin test routinely used is the cutaneous test or von Pirquet test. This is so on account of the ease in which it can be made. After cleansing, a drop of old tuberculin is applied to the skin, a scarifier is then placed through the drop and the layers of the skin are broken. The positive reaction in both appears the same. This consists of an area of redness, with some induration of the skin at the point of introduction. The reaction increases in intensity with the activity of the tuberculous infection within the body. As the activity of the lesion lessens or becomes more chronic, the skin tests also lessen, but will remain as long as there is activity of the tuberculous focus. A reaction of the Mantoux test is considered positive when the area of redness and induration exceeds 1 cm. It reaches its maximum intensity in about 48 hours.

A total of 520 Indian children were thus tested, and an average of 71.9 per cent of the total gave positive reactions. The total number of boys tested were 246, with a positive reaction of 71.9 per cent. The total number of girls tested were 274, and these also gave a positive reaction in 71.9 per cent. Table I shows the age groups of boys and girls, with the total number of positive and negative reactions:

TABLE I

	GIRLS		BOYS		Total	Total
Age	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.
5	1	1	1	0	2	1
6	0	5	2	1	2	6
7	8	3	3	7	11	10
8	4	10	3	3	7	13
9	5	7	4	13	9	20
10	8	9	4	10	12	19
11	11	12	8	15	19	27
12	13	11	6	23	19	34
13	4	14	6	9	10	23
14	5	22	10	18	15	40
15	7	30	7	11	14	41
16	3	25	5	17	8	42
17	4	24	6	14	10	38
18	3	13	0	16	3	29
19	0	8	3	15	3	23
20	1	3	1	5	2	8
	77	197	69	177	146	374

The results, for the sake of convenience, have been classified into four grades:

Grade I indicates a reaction of the Mantoux test of 1 cm. in diameter.

Grade II indicates a reaction of 1½ to 2 cm. in diameter.

Grade III indicates a reaction of 2 to 4 cm. in diameter.

Grade IV indicates a reaction of over 4 cm. and also includes those in whom a lymphangitis occurs, or in whom a reaction of the axillary lymph nodes is noted.

Only 43 pupils were classified as Grade I; 117 presented reactions of 1½ to 2 cm., and were classified as grade II. Of the group classified as grade III, 125 pupils had a positive reaction of 2½ to 3 cm.; while 61 pupils presented a reaction of 3½ to 4 cm., a total of 186 in this group. Twenty-eight children were classed as grade IV reactors. Twenty-six of these developed a reaction of 4½ to 5 cm., and two were over 5 cm. in diameter.

The group of children developing the grade IV Mantoux reaction, with three others who were a strong grade III, were studied in detail, with roentgenograms and daily observations. Of this group of 31 Indian children, 27 were girls and only 4 boys. The ages varied from 9 to 20 years. Only eight presented an appearance of undernourishment. Twenty-two pupils were of average weight for height and age. Observations carried over a period of months showed that only five had lost weight during the school year, while twenty-two gained in weight.

There is a history of direct exposure in all 31 cases. Every child gave intelligent positive answers to questioning for evidence of tuberculous cases in their homes. Several have lost one or both parents from tuberculosis, and others have lost a brother or sister. All can remember living in a home where someone had a long continued illness, the principal symptom of which was cough and expectoration.

Physical examination of this group revealed a normal appearing thorax in twenty-five of the pupils, while six were flat or hollow chested. In three a difference of the percussion resonance was noted at the apices, and hilum dullness was increased in 15. An increase of spoken voice was noted over the right apex in 23 of the pupils, and over the left apex in three. Whispered voice increase was present in the right apex in four. Rales following cough were present in right apex in one child and in the left apex also in one child. Only six of the entire group presented negative auscultatory findings.

The roentgenograms presented some evidence of pathologic change in all instances. The principal finding was that of calcified areas, found in the negatives of 27 of the Indian children. These were small and considered diffuse in 24. Areas of calcification up to 2 cm. in diameter were noted in three others. The calcification was noted in both lungs in 21 of the cases, and in the right lung only in four instances and in the left lung only in one instance. Associated with the calcification in all instances as well as in the remaining four roentgenograms, an increase of hilum shadows was noted. This was fairly well marked in twelve instances. All of the roentgenograms, in addition, presented increased lung markings, either toward the apex or base or both, with some extending to the periphery.

From the appearance of the roentgenograms, I would assume that a childhood tuberculosis was present in all. The degree of present activity depends upon the daily observations. Three of the cases were found to have a slight afternoon rise in temperature, ranging from 99 to 100. A corresponding increase in the pulse rate was noted, varying from 90 to 100. No cough was present, and the sputum examinations were found to contain no *Myobacterium Tuberculosis.*

A further detailed study of the remaining pupils in whom a positive tuberculin test was found, especially those showing a grade III reaction, would undoubtedly reveal many more with a greater or less degree of activity.

These Indian children should have the same advantages given to them to overcome tuberculosis as are given to the white children in all of our progressive centers in the United States.

There are still several questions arising as to how best to deal with the tuberculosis situation among the Indian children. There is no doubt from the results of the Mantoux test conducted in this school that there are active cases of pulmonary tuberculosis in apparently healthy children. They mingle with other children in all of their activities and living conditions, and are a menace to the health of the remainder. These children do not really need sanatorium treatment, but should be placed in a preventorium where their activities could be more carefully controlled, and contact with healthy children avoided.

The above results of this test in a group of Indian children does not differ so greatly from group testing in public school children examined in Philadelphia as reported by Dr. Abt(1). Dr. Eugene Opie(2) calls attention to the investigations of public school children during the past five years. These investigations show a widespread occurrence of grave tuberculous lesions in the lungs of children who do not appear to be ill; but who, on the contrary, appear to be in robust health. The symptoms and physical signs usually associated with tuberculosis are not found in these children. Tuberculous infection is found by the Mantoux test. The grade of reaction, with the roentgenograms and a daily careful observation, furnish us with an idea of its activity.

These studies have shown in the childhood type of tuberculosis, that a transition from a latent to a clinically active disease is often difficult to define.. Furthermore, that a considerable number of children with clinically manifest tuberculosis escape the attention of parents, teachers, nurses and physicians.

CONCLUSIONS

1. Tuberculosis in Indian children of school age is much more prevalent than is apparent from observation.

2. Tuberculosis should always be kept in mind in examining the child who has an obscure illness, even periodically.

3. The Indian child, comparing with recent publications, has no more evidence of a tuberculous tendency than other children, and apparently has an equal degree of resistance.

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DISCUSSION

F. W. HEAGEY, M. D. (Omaha): This work is one of the most up-to-date of any type of work we have followed on tuberculosis at the present time. In the past, most of the efforts of the National Society and the rest have been taking care of adults and prevention, as far as they were concerned.

The Montoux test is possibly as reliable as any of the tests, and it belongs in the hands of an individual who has large groups of children to deal with. It requires more technical attention to details than the von Pirquet's test. There is a certain element of danger. It is serious in the case of pulmonary tuberculosis, to give one-tenth of a milligram of tuberculin and light up the process when the patient is making every effort to overcome it. Nevertheless, it is the most accurate.

There is a great deal of discussion about the unreliability of these tests, not only in human body, but in cattle. Where you have a positive Mantoux or Pirquet test, you can demonstrate the patient has some form of tuberculosis. We say the patient is infected with tuberculosis. Let us differentiate. A majority of us are infected with tuberculosis, but it does not necessarily mean an active tuberculosis. So the presence of a positive Mantoux or Pirquet would excite our interest, but we must be careful not to say he has tuberculosis. It is just as serious to say a patient has tuberculosis, and break up his mode of living, as it is to miss diagnose tuberculosis. We are being criticized for this wholesale diagnosis of tuberculosis based on tests, rather than on actual clinical findings.

The most important things are the contacts and detailed history. Those families who lived on the outskirts of a hospital for tuberculous veterans had four times as many positive von Pirquets as in the usual run of city children. Tuberculosis is not inherited, but acquired by contact with an open case. Where we find the history is negative and there is absence of physical signs, ask the patient to come back, but be wary about making a diagnosis of tuberculosis on basis of physical signs and tests alone.

DR. DAVIS (closing): As to the history of exposure in these cases, every one of these 4-plus children gave a history of contact with tuberculous people. The result of this Mantoux test, while it looks large, with 71 per cent positive reaction, does not vary from the reports given by Dr. Opie, of Philadelphia, in regard to group tests. He gave from 60 to 80 per cent positive Mantoux reactions in testing groups of high school students and children; so that we feel the Indian children probably show as much resistance as do the average white children and adults. The Mantoux test has been found by us to be superior to other tests and we have found no bad results from its use.

THE ETIOLOGY AND MECHANICS OF MASSIVE ATELECTASIS*

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Massive atelectasis does not occur except in patients who are confined to bed. It is found as a rule in those obliged to recline in one certain posture. Experience has shown however that the condition may be prevented by frequent changes of posture and that its symptoms may be relieved by rolling the patient from side to side(1). With the above in mind let us inquire into the adaptations of the mechanism of respiration to changes in posture.

Respiration in the supine position. In the erect and sitting position the chest is in partial collapse due to the effect of gravity on the ribs and sternum. Landerer(2) measured the force of downward traction exerted on the ribs by their own weight and by the weight of the attached soft parts, diaphragm. and heart. In the cadaver he showed the total force equalled 1860 gms, and that upon relieving the ribs of the weight they moved upward and forward, i.e., they assumed an inspiratory position.

On changing from the erect to the recumbent position the ribs are in part relieved from the effect of gravity, the weight of the shoulders and the attached viscera; as a result the ribs move upward and forward enlarging the chest. Measurements, in a large series of chests of normal adults in our clinic, have shown that upon assuming the supine position the circumference of the chest increases in every case. The increase varies from 1 to 7 cm. In many instances the circumference, during expiration in the supine position, is larger than that during inspiration in the erect posture. (The measurements were made at the level of the sixth costal cartilages). On changing from the erect to the supine posture, signs of emphysema appear over the lungs, namely increased resonance and a decrease in the areas of the heart and liver dullness; the heart's apex beat, visible in the erect posture, may disappear in the supine position.

In the recumbent posture the mean respiratory position is raised, the lungs being in relative emphysema, and the force of inspiration is limited as the phase of inhalation begins with the lungs already largely inflated.

By means of manometric measurements Aron has(3) found that the intrapleural pressure rises nearer atmospheric values in dorsal recumbency. The diminished negative intrapleural pressure and the decreased amplitude of respiration in the recumbent position have a slowing effect on the venous circulation by diminishing intrathoracic suction. The chest breathes (aspirates) blood from the veins in the same real sense that it breathes air from the trachea. Prolonged recumbency and shallow breathing are important factors in the etiology of postoperative thrombosis(4) as well as in the etiology of massive atelectasis. With the diminution of costal expansion in the supine position the diaphragm assumes compensatory activity; but after a variable length of time this hyperactivity disappears and the diaphragmatic excursions diminish, becoming smaller than in the erect posture (Hofbauer)(5).

In the recumbent position, expiration is facilitated becaused this act begins with the lungs in maximum inflation, but the vital capacity (the amount of air expelled from the lungs during a forced expiration following a forced inspiration) in the reclining position is diminished, due to the deficient power of inspiration. It is to be

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noted that if there has been interference with expiration, as by a surgical incision involving the expiratory abdominal muscles. the vital capacity will be reduced still lower (8)(9).

Measurements of the vital capacity in the various body postures, made in our clinic, show a decrease in the supine position varying from 3% to 15% with an average decrease of about 6%. These findings are in agreement with those made by Christie and Beams(6) and by Rabinovitch(7).

A reduced respiratory efficiency in the recumbent position is observed daily in patients suffering with dyspnoea resulting from circulatory or respiratory failure, and these patients breathe more comfortably in the erect posture. People with partial nasal obstruction generally breathe through the nose in the erect posture, but upon assuming the recumbent position they frequently must resort to mouth breathing due to the decreased power of inspiration in this position.

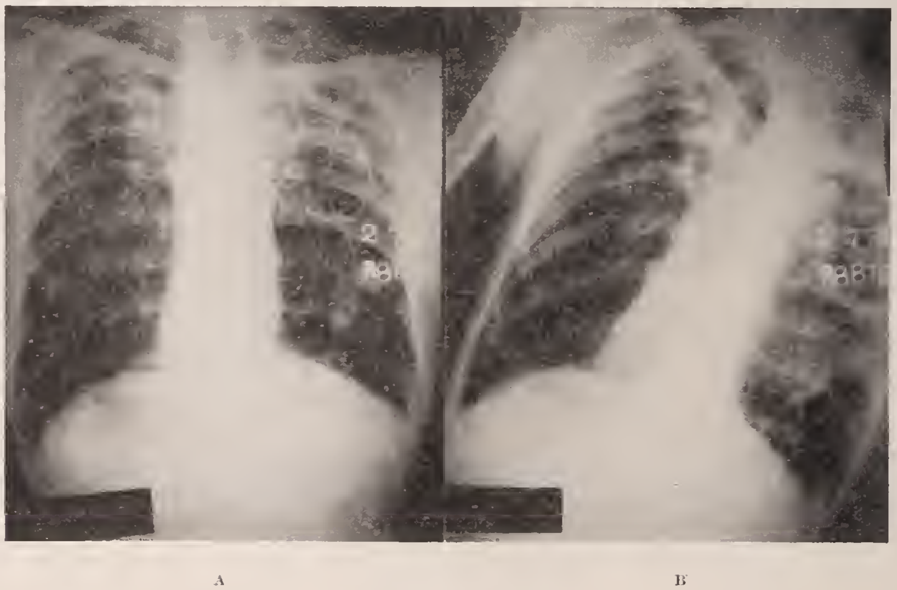
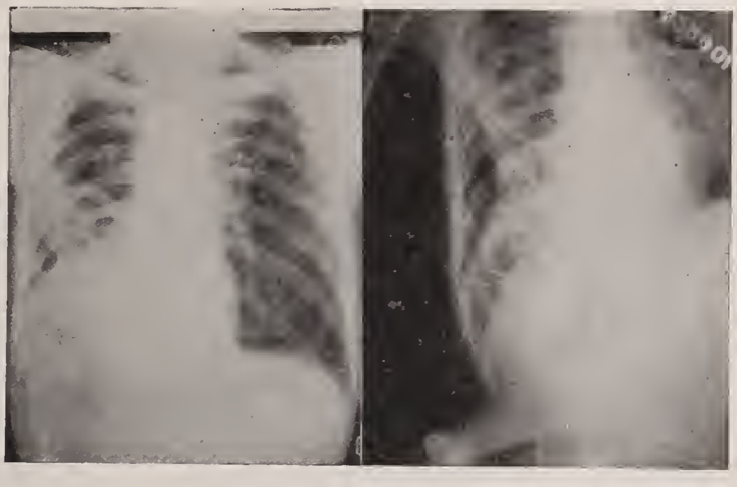


Fig. 1. A. Film taken in inspiration, patient standing erect.

B. Film taken in inspiration, at same sitting and at same tube distance as A but the patient is leaning over to the left side. Note that the ribs on the lower (left) side are slanting, that is, are in expiratory position, while the ribs of the upper side are more horizontal than in the erect posture. The lower lung is smaller, due to crowding of the ribs, encroachment of the heart and ascent of the diaphragm; the upper lung is larger, due to elevation of the ribs, shifting of the heart, and descent of the diaphragm (the right costophrenic angle is particularly wide and deep as compared with A). The cavities in the right lung are also larger; note especially the cavity at the level of the fifth costal cartilage and the cavities immediately above and below the clavicle. The entire thorax and the individual ribs are not larger on this film than A.

After prolonged dorsal recumbency the air exchange is greatly diminished, the tidal air and the vital capacity are decreased, and there is a disposition to the development of atelectasis, especially in the dependent and distal portions of the lungs. This disposition is particularly noticeable in individuals with enfeebled musculature due to prolonged illness or disuse, as in the cachectic, the senile, and in infants, as well as in cases of general weakness following surgical shock. We know that respiratory infections, which may be insignificant in an ambulant individual, often prove very serious or fatal in those confined to bed. That these "terminal" broncho-pneumonias and hypostatic pneumonias are in large measure due to atelectasis has been repeatedly emphasized. Krehl(10) and Sewall(11) have among others called attention to this point.

Muller, Overholt and Pendergrass, published observations(12) on the external respiration following abdominal operations. They found that the chest circumference increased and that the diaphragm assumed a high position and made small excursions, and that the lung volume was diminished. These authors were dealing with patients recovering from surgical operations and attributed the "hypoventilation" of the lungs to the effect of laparotomy. As described in the preceding paragraphs, the changes observed by Muller and collaborators, occur in many cases of enforced recumbency even without surgical operations. The abdominal incision renders deep breathing painful and interferes also with changes in posture and so favors underinflation of the lungs. While it is true that massive atelectasis is frequently observed after abdominal operations, it also occurs in non-surgical conditions which confine the patient to bed and interfere with deep breathing. We have observed massive atelectasis in pulmonary tuberculosis, general paralysis. in comatose states (alcoholism and epilepsy), in circulatory failure, and as complications of acute infectious diseases.



A

B

Fig. 2. A. Bedside picture. Patient sitting, taken in inspiration. There is partial pneumothorax, collapsing the base of the left lung. The right lung is much larger than the left.

B. Inspiration, with patient lying on right side. (The patient had maintained this position two days after A.) The right lung is now much smaller than the left; the diaphragm is placed high on the right side and the heart is displaced to the right. The left lung is emphysematous and even the atelectatic base has been expanded in part. The pneumothorax remains unchanged. Note the sagging of the abdominal viscera.

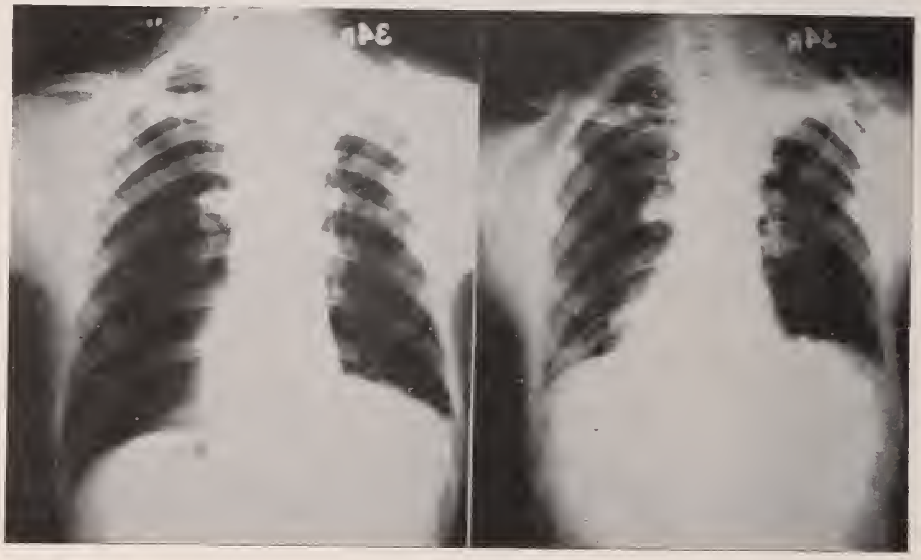
On examining the posture of lateral recumbency we see that the effect of gravity and of the traction of the viscera is such that the recumbent hemithorax is compressed while the upper side is enlarged by the elevation and separation of the ribs and the descent of the diaphragm. On the under side the diaphragm rises due to increased abdominal pressure caused by the sagging of the viscera, while in the upper abdominal aspect the pressure falls and permits a low position of the diaphragm on this side. The mediastinum shifts toward the lower side. The lower lung is in a position of expiration; the upper lung is emphysematous. Over the lower lung there is decreased resonance and increased conduction of the breath and voice sounds (due to partial collapse of the lung) over the upper lung there is hyper-resonance and diminished conduction of sounds. Adams and Pillsbury(13) ascribed this improved conduction over the lower side to the bed acting as resonator; however the same phenomenon is observed even when the lower side is not supported or when the subject leans over to one side. In the lower lung conditions are theoretically favorable for inspiration because expansion begins with the lungs in complete expiration, but the ribs in their excursion must overcome the weight of the entire chest and the diaphragm has to overcome an increased abdominal pressure. Nevertheless in the healthy individual the muscles of respiration overcome these handicaps so that in the lower lung the air exchange is, at least for a time, much better than in the upper lung and on fluoroscopic examination the vigorous action of the lower diaphragm is particularly conspicuous. But this hyperactivity of the diaphragm soon ceases(14), and the recumbent lung becomes small and quite motionless. At this time the breath sounds over the lower lobe are feeble, and with the decreased resonance, the findings are not unlike those of pleural effusion. Under these circumstances, pleurisy with effusion or empyema may be erroneously diagnosed and tapping of the pleural cavity may be attempted. Such errors have been reported by Sewall(15) and by Barr(16). For differential diagnosis the patient should be rolled over on the other side and the atelectatic lung is thus likely to become inflated as the hemithorax enlarges with the change in position. This procedure of rolling the patient from side to side is likewise frequently effective in the treatment of massive atelectasis, and it is interesting to recall the old Marshall Hall method of artificial respiration after drowning, which consists in rolling the body from prone to lateral position(17). We would repeat for emphasis sake that each hemithorax goes through an inspiratory movement when it is turned upward and is compressed when it is turned downward.

BRONCHIAL OCCLUSIONS A CONCOMITANT OF ATELECTASIS

It is known that during respiration a good deal of serum is exuded from the pulmonary capillaries into the lung passages and exhaled in the form of water vapor. Expired air is very nearly saturated with water which can be seen when we exhale into the cold atmosphere on a frosty day.

Now in the atelectatic lung, while the air exchange is diminished the circulation of blood continues, and the result is an accumulation of fluid in the air passages. In addition the normal secretions of the bronchial mucous glands (and abnormal secretions, if present) accumulate, for there is no expiratory current of air to propel the secretions towards the tracheal bifurcation.

Patients who maintain one type of posture because movement is painful or through weakness, dyspnoea or unconsciousness will frequently refrain from coughing and from deep breathing for the same reasons. Naturally, secretions thus accumulate, and the small bronchioles, with a calibre of about one millimeter, are easily occluded by these secretions, which are viscid and hard to dislodge. As fluid accumulates in the bronchioles, it overflows into the lumina of communicating bronchi which lead to air bearing lobules and thus causes the collapse of new areas. Thus we go from bad to worse in that the increased airlessness of the lung leads to increasing amounts of secretion in the bronchi, which in turn causes the collapse of new lobules. Under these conditions it is hard to determine which is the primary factor, the collapse of the alveoli or the bronchial occlusion. A vicious circle is established which under suitable circumstances leads to rapid deflation of the affected lung.


A

B

Fig. 3. Case of atelectasis of right upper lobe, developing during attack of facial erysipelas. A. Inspiration. The right upper lobe is collapsed. The left lung is much larger than the right. The heart is displaced to the right.

B. Expiration, taken at same sitting as A. The atelectatic lobe is larger and air-bearing during the phase of expiration (paradoxical breathing). The heart and trachea have moved to the left (pendulum movement of mediastinum in atelectasis.)

THE PRODUCTION OF SYMPTOMS IN MASSIVE ATELECTASIS

The respiratory distress in massive atelectasis is a striking symptom and is out of proportion with the extent of lung disablement. In lobar pneumonia and pleural effusion no such degree of dyspnoea is observed. The dyspnoea, cyanosis, rapid pulse, and appearance of shock are reminiscent of the symptoms presented in open pneumothorax. Massive atelectasis and open pneumothorax have certain factors in common which are the cause of these severe symptoms, namely the great difference in intrapleural pressure on the two sides of the chest, the great fluctuations in intrapleural pressure on the affected side with each respiratory phase and the mediastinal vibration with respiration and finally the vicarious breathing of one lung into the other.

These phenomena of open pneumothorax have been repeatedly discussed in the literature (18)(19)(20). In articles published elsewhere(21)(22), we have discussed the fall of intrapleural pressure in atelectasis, the causes of the mediastinal displacement, and the migration of the mediastinum with each respiratory act in cases of extensive unilateral atelectasis.

In the functionless atelectatic lung, the respiratory passages if patent add to the respiratory "dead space" and thus diminish the efficiency of the good lung. The intrabronchial pressure of the functionless lung is nearly that of the external air and does not vary much with the respiratory phases. In the better lung with its compensatory activity, there is a marked fall of intrabronchial pressure during each inspiration and a rise of pressure during each expiration. At the time of inspiration air enters the functioning lung not only from the trachea but also from the lower lung where the pressure is approximately the same as in the trachea; at the time of expiration air will escape into the lower lung, as well as into the atmosphere; thus during the succeeding respirations the good lung will breathe stale air from the other lung.

The dyspnoea is the more pronounced as the stale air reaches the alveoli before the fresh atmospheric air. This paradoxical breathing from one lung into the other is in part occasioned by the narrowing of the glottis during forced expiration while the interbronchial communication remains unchanged. In atelectasis of the right lung the conditions are more favorable for paradoxical breathing due to the direction and calibre of the right main bronchus.

On physical examination it may be observed that on the affected side of the chest the interspaces are further retracted with each inspiration and this phenomenon is seen best in the thin individual with wide intercostal spaces. In the fluoroscope, the affected lobe is seen to move upward with the ribs (Paradoxical movement) and to become smaller during inspiration. During expiration the lobe moves down and enlarges. The diaphragm may also go through paradoxical excursions. If there are mediastinal adhesions preventing the to-and-fro movement of the mediastinum, the paradoxical breathing will be less marked or even absent. Under these circumstances massive atelectasis may occur without symptoms. The conditions here are analagous to those of open pneumothorax in cases of rigid mediastinum, where the symptoms may be slight. The raising of the intrapleural pressure on the affected side by the injection of air will also ameliorate the symptoms in massive atelectasis (23).

Paradoxical breathing however is only possible when the main bronchus of the atelectatic lung remains patent. When there is excessive secretion in the bronchi the secretion gradually accumulates, rises in the smaller bronchi and drains toward the large bronchus of the lower lobe. As this bronchus is filled to overflowing its contents will suddenly spill over into the large bronchus of the upper or middle lobe, thus shutting off at once the entire lobe from respiration. At this moment there is sudden increase in dyspnoea and the patient begins to make violent effort at expectoration. It is at this stage that examination discloses the physical and x-ray signs of atelectasis.

SUMMARY

1. In prolonged dorsal recumbency the occurrence of atelectasis is favored by the poor ventilation in this position (a decrease in the tidal air and vital capacity) and the inactivity of the diaphragm. Many cases diagnosed as bronchopneumonia and hypostatic congestion are really instances of atelectasis.

2. In prolonged lateral recumbency the occurrence of atelectasis is favored in the recumbent lung by the increased weight and compression exerted on the lower hemithorax and the inactivity of the lower half of the diaphragm.

3. The various pathological states which confine a patient to one certain posture in bed generally also interfere with vigorous respiration and coughing. Surgical operations on the chest or abdominal wall further reduce the respiratory efficiency by injuring the muscles of respiration and by causing pain on deep breathing and on turning from side to side.

4. Occlusion of a large bronchus is not necessary for the initiation of atelectasis or for the development of the typical symptoms of dyspnoea. cyanosis, efforts at expectoration, etc.

5. Massive atelectasis can occur without the occlusions of large bronchi. The respiratory distress in such cases is caused not only by the depleted lung reserve, but largely by the vicarious breathing from one lung into the other.

6. In cases with occlusion of a large bronchus the symptoms are precipitated by the overflow of secretions from the lower lobe bronchus into an upper lobe bronchus.

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(Additional references will appear in reprints.)

DISCUSSIONS

B. M. KULLY, M. D., (Omaha): Some of these slides are quite interesting to me, as they show a block of one of the primary or secondary bronchi. I feel that where you have a pathologic lesion limited to one or more lobes, the pathology must be in the bronchus leading to those lobes. Unless the etiological factor is definitely understood, the patient with an atelectasis of one or more lobes is entitled to a bronchoscopy, unless he is too ill to warrant the procedure. It is not a severe procedure for the average patient.

If cases of this type are not quickly relieved by the inhalation of carbon dioxide, the passage of the bronchoscope may sometimes be a life saving procedure. In general anaesthesia, there is always inhalation of mucous and secretion into the tracheobronchial tree, unless the head is lowered. When this secretion is sufficient to block the bronchus, mechanical aspiration is indicated.

ADOLPH SACHS, M. D., (Omaha): I have been interested in the mechanics of the chest for many years, and it always brings up problems that are of interest to us all. It is becoming more thoroughly understood than it has in the past.

Cases that we formerly regarded as pneumonias are now known to be cases of atelectasis, especially surgical pneumonias. If these cases are due to atelectasis it is hard for me to understand why the temperature usually drops the third or fourth day and the patients rapidly improve. I wish the author in his discussion would satisfactorily explain the mechanics, with the whys and the wherefores. It hardly seems possible that all cases would suddenly breathe deeply on the third or fourth days and clear up their atelectasis.

Carbon dioxide inhalations are of great value and should be used in all post operative cases.

Another interesting fact in mechanics of the chest is as follows: if you take a normal patient and have him lie on his side the upper side seems duller on percussion than the lower side. This may be due to the fact that lying on his side compresses the side and increases the anterior-posterior diameter, making it more resonant.

I enjoyed this excellent paper very much indeed.

DR. KOROL, (Closing): The remarks the doctors have made are correct and scarcely call for further comment.

Dr. Sachs has noticed that after abdominal operations there is generally some temperature elevation associated with certain respiratory symtoms. These manifestations disappear on the fourth or fifth day. In explanation of this, I might suggest that after the pain of the abdominal wound has diminished, or after the patient has developed a sore hip or sore shoulder from continued lying on it, he begins to change positions in bed; or it may be that the nurse gets after the patient and turns him over in bed for the purpose of bathing him, or for changing the bed clothes. The ventilation and drainage of the recumbent lung then improves.

I wish to emphasize that massive atelectasis occurs not only in postoperative conditions. The slides that I have shown have been made of cases who had not undergone any operations.

OBSTRUCTION OF THE SMALL INTESTINE DUE TO BENIGN GRANULOMA*

CLAYTON ANDREWS, M. D., F. A. C. S.,
Lincoln, Nebr.

History of Rev. M. M. L., Arnold, Nebraska. Bryan hospital. No. 3943. Age 52. Male. Married.

Chief complaints: (1) Pain in abdomen; (2) recurrent periodic distention of abdomen; (3) vomiting; (4) loss of weight and strength.

Admitted February 15, 1930.

History present illness: Patient states that he has had "stomach trouble" almost entire life. For about thirty years has had hunger pains with food and soda ease, in recurrent periodic attacks coming on three to four hours after meals. Greasy, spicy, and acid foods cause distress. Improvement on a bland diet and alkaline. There was no vomiting up until the more recent history which will be mentioned later.

Appendectomy 15 years ago with some slight benefit but continued to have "stomach trouble". There was practically no gas in this phase of the history.

About four years ago there was a definite change in his symptoms. When he would awaken in the mornings he felt full of gas in the lower abdomen with more or less discomfort but no severe pain, diarrhea, or constipation. About this time he was examined at one of the large clinics and his gallbladder removed in March, 1928. There was no benefit from this operation and the patient continued to have gaseous distention and more severe pains, the condition gradually becoming worse about Christmas of 1929. At this time the pains became very severe requiring hypodermics with morphine for relief and the patient himself noted a recurrent swelling of the lower left abdomen which would travel across to the right side accompanied by severe griping pain and audible rumbling of gas. This swelling would appear many times during each twenty-four hours. In the past three weeks the patient has been able to eat but little, has lost a great deal of weight, has vomited frequently, has had considerable diarrhea of a watery nature without any visible blood. He has become very weak and nervous and is very much depressed mentally. His best weight is 150 pounds, which he last weighed about one year ago. His present weight is 135 pounds. He has frequently vomited bile, mucous, and stomach contents, but to his knowledge has never vomited any blood.

Physical Examination: Patient is a white adult male, acutely ill. Shows marked dehydration. Height 5 feet 8½ inches. Weight 135 pounds, temperature 99, pulse 86, blood pressure 124/74. Head and neck, sclera somewhat pale, extensive psoriasis of the scalp. Thorax: Well formed, both sides equal and freely movable. Heart and lungs negative. Abdomen: There are firm operative scars in the upper and lower right rectus regions. There is no hernia. There is tenderness, grade I, over the entire lower abdomen but no palpable mass is found. On inspection one sees every few minutes a sudden distention of the intestines in the lower left quadrant forming a mass about six inches long and four inches wide, accompanied by visible and audible peristalsis and severe pain. This mass then travels upward and across the abdomen to the right below the umbilicus. There is a psoriasis of the pubic region and of the back and of the extremities. There are no palpable lymph glands.

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*Read before annual meeting, Nebraska State Medical Association, Omaha, May 12-14, 1931.

Rectal examination is negative on the first day but on the second examination a firm irregular mass could be felt at the tip of the examining finger, on the third examination we were again unable to palpate the mass. Because of the extreme dehydration and pain the patient was given intravenous saline and glucose solutions and sedatives and rest for a few days after admission.

During this time patient was seen by Dr. Floyd Rogers in consultation regarding his general condition and by Dr. Everett Angle who was asked to treat the skin condition.

February 21, 1930. Proctoscopic examination by Dr. Rogers and the writer. This examination reveals no mass in the large intestine but the proctoscope meets with an impassable resistence at 15 cm. There is no blood visible and but moderate injection of the mucosa.

February 23, 1930. Second prostoscopic examination with same findings, it being impossible to pass the proctoscope farther than 15 cm. Tentative diagnosis, chronic progressive intestinal obstruction; probable malignancy of colon.

X-ray examination by Dr. E. W. Rowe, February 18, 1930.

Only positive findings given. Stomach, hypertonic, no evidence of ulcer craters, filling defects, or other pathology. At the end of five hours there is a fair sized residue, small intestine duodenal cap full and complete. Due to late emptying of the stomach the coils of the small intestine are filled throughout the five hour period. There was a slowness noticed in the passage of the meal into the lower coils of the terminal ileum suggesting interference with the gradient in the lower intestinal tract.

Large intestine; end of five hours, colon shows marked distention throughout its entire course filling almost the entire abdomen; same picture at end of twenty-four hours. The ascending and pelvic portion of the colon show the greatest evidence of distention. Also at the end of twenty-four hours the ileocecal valve does not hold against pressure and allows regurgitation into the ileum with marked distention of the terminal loops of the ileum. At this stage there is no roentgen evidence of localized obstruction, general ileus seems to be present involving the entire colon and some of the loops of the terminal ileum. This suggests that there must be an obstruction low in the colonic tract and I would expeet to find it more or less general.

Forty-eight hours. Colon has been partially emptied by flushing but there still remains a fair sized residue and there is evidence of distention of the entire colonic tract.

Barium enemia administered which entered readily and soon filled entire colon. We were unable to distinguish any filling defects or any other evidence of pathology, except the distention of the colon which is characteristic of a long standing condition.

My impression of this case is that there is some obstruction low in the colon which accounts for the distention of the colonic tract and I would expect to find it extrinsic, but, of course, carcinoma cannot be ruled out.

The patient responded quite well to pre-operative treatment, became more comfortable and was able to comfortably retain a bland nourishing diet and had fairly normal bowel movements during these few days. At this time the patient's condition was frankly explained to him and his wife and they were told that there undoubtedly was a chronic progressive intestinal obstruction the exact nature or location of which could not be determined but that abdominal exploration was definitely indicated. Patient stated that he felt very sure that operation was necessary and readily agreed to accept the advise given to him.

Laboratory findings: Urine, on admission acid, 1020, no alb., no sugar, acetone 2 plus, diacetic acid 2 plus, occasional pus cell. February 19, albumen faint trace, no sugar, acetone and diacetic acid had disappeared. Occas. W. B. C. Feb. 22. Urine normal. Postoperative, urine negative. March 6, 1930, urine negative, except faint trace of alb. and occas. pus cell. March 10, urine negative.

February 13, blood Wassermann negative.

February 16, blood count. Hg 74%. R. B. C. 4,200,000. W. B. C. 8400. W. B. C. 12,200.

March 6. March 10, 13,200 (post-operative pneumonia).

Feces, February 20, light brown color, normal consistency, no macroscopic or chemic blood, no protozes, no pus. February 17, examination the same.

Operation February 24, 1930. Ethylene anaesthesia, left lower rectus incision. Upon opening the abdomen there was found to be an enormous distention of the ilium resulting in the diameter of the ilium measuring 4½ to 5 inches with extreme thickening of the walls, especially in the terminal portion. About 4 inches from the ileocecal valves in the terminal ilium was found a highly injected, irregular, firm, nodular, partially mobile mass, causing an almost complete obstruction of the bowel. Adjoining the mass the bowel was very edematous, thickened and distended; the adjoining mesentary was also edematous, injected, and thickened and filled with many large lymph glands, varying in size from one to ten mm. in diameter. This mass laid very deeply in the pelvis pressing against the rectum and was sufficiently mobile to explain why it was palpable upon one examination and not palpable upon another examination. The mass together with about 8 inches jejuneum was resected and because of the enormous dilation of the ilium above the growth and edema an end to side anastamosis was done. A note was made at this time that because of the extensive edema of the bowel wall there may be considerable interference with the healing of the anastamosis. Prognosis: Noted as grave at this time.

During the operation the patient was given 1 cc. of digifoline hypodermically. One small rubber tube drain at lower end of incision. Pre-operative diagnosis: Chronic progressive intestinal obstruction, cause unknown. Post-operative diagnosis: Sarcoma, or tuberculoma of ilium with intestinal obstruction.

Pathological report: Gross pathology. Upon sectioning the growth it is found to involve the entire wall of the ilium, the lumen of which has been reduced to a point where it barely admits the passage of a small steel probe.

Pathologist report: "Segment of small intestine: Infiltration of the wall with a soft growth which cuts readily leaving a dry, yellowish surface. A small amount of thick, caseous material appears from several cavities on section. An ulcerated surface presents into the lumen.

"Smear of the pus shows many degenerated pus cells chiefly segmented. No tubercle bacilli present. Grossly and in the smear material does not have appearance of a tuberculous lesion. Final opinion reserved until after tissue section is examined.

"Microscopic pathology: Section of small intestine: The tissue is an infectious granuloma totally devoid of epithelial elements. There are no giant cells, no foci of fibrous encapsulation, therefore, no evidence of tuberculosis. Appearance not that of a syphilitic granuloma.

"Pathological diagnosis: Granuloma pyogenicum.

"Signed: Miles J. Breuer."

Progress notes (abstracted):

February 25, 1930. Patient in very good condition, no distention, wound dressed and in good condition, mentally alert.

February 26, 1930. Pulse good, no nausea, slept well, no distention.

February 27, 1930. Decidedly improved, abdomen flat, passing flatus, and two liquid stools.

February 28, 1930. Wound dressed, drainage tube shortened, slight serous drainage, general condition good.

March 2, 1930. Very good general condition, small amount of sero-purulent drainage from lower angle of wound. Bowels moving well, taking soft diet well.

March 3, 1930. Wound dressed, small abscess in superficial layers of wound, incised and hot boric packs applied. Eating well, normal bowel movement, definitely improved.

March 5, 1930. Drainage of wound less, good general condition, except some pain at base of left lung. Examination of chest negative.

March 6, 1930. Same complaint of pain in chest, again with negative findings, x-ray negative.

March 7, 1930. Still complains of pain base of left chest, although slept well has no cough and states that breakfast tasted good, first meal he has really enjoyed in months. Condition of wound definitely improved.

March 8, 1930. No complaint of pain in chest, eating and sleeping well.

March 10, 1930. Increased pain in left chest with temperature rise which had previously been normal, up to 102 degrees. X-ray examination of the lungs. Diagnosis diffuse lobular well disseminated throughout right lung, involving mainly the lower lobe with same condition on left side, apparently of a more acute nature. No complete consolidation. Diagnosis, acute diffuse bronchial pneumonia

Abdominal condition entirely satisfactory, wound healing well. Patient stated that he had a similar condition in the chest following the cholestectomy two years ago.

March 14, 1930. Infection of wound practically disappeared. Chest condition greatly improved, normal temperature, patient states that he feels stronger each day. From this time on there was steady improvement with increase in appetite and strength and the patient was dismissed from the hospital on March 26, 1930, at which time the wound was perfectly healed, the patient was ambulant and his food was relished. He has reported to me several times since his return home. There has been a steady gain in weight. Upon leaving the hospital the patient weighed 105 pounds. In a letter written approximately two months after leaving the hospital he reported that he was sleeping and eating well and that his weight was 140 pounds. Three months after the operation he reports that his weight is 150 pounds, eating and sleeping well and no complaints except some looseness of the stools.

In communication April 20, 1931, patient states that he is weighing 160 pounds which has been his stationary weight for several months; he says he feels good most of the time and has a very good appetite. His only complaint consists of gas in the lower intestines and some diarrhea which consists of two to three stools a day in spite of milk of bismuth he has been taking.

The interesting points in connection with this case are the long continued and slow developing symptoms of gas, distention, and finally pain with loss of weight and dehydration; the removal of the gallbladder four years prior in an effort to alleviate symptoms which were undoubtedly connected with this obstruction; the location of the growth in the terminal ileum with almost complete obstruction and the extreme thickening and edema of the ileum proximal to the growth, which gave the appearance under x-ray of large intestine; the absence after prolonged search of malignancy or tuberculous; the change in the physical well-being of the patient following his recovery, which includes a weight gain up to 160 pounds which is ten pounds more than he has weighed in his entire life, his healthy color which has never been present for the past twenty years and his general state of well-being which is in contrast to his dyspeptic complex which had been present for some 15 or 20 years.

One interesting feature is the long duration of the symptoms. I feel positive the growth existed four years, and possibly longer. It was at that time his gallbladder was removed.

(Dr. Miles Breuer here showed slides of the case, stating that his diagnosis was pyogenic granuloma).

DISCUSSION

CLYDE ROEDER, M. D. (Omaha): Mr. Chairman and Members of the Society: I think Doctor Andrews is to be congratulated on the successful outcome of this case.

The difficulty in discussing a paper like this is the rarity of the case. I have not seen anything similar. There is a tendency with malignancy of the small bowel to spread out more than in the large. I was surprised to see how it resembled a malignant growth. It is interesting to note the result of the anastomosis, a large dilated segment joined to a smaller and relatively contracted portion below the neoplasm.

The story of intestinal obstruction will probably be rewritten, particularly of the acute type which brings about the greatest physiological upset. This patient was relatively quite well, with the exception of the intermittent obstruction of the small intestine, which pointed to a benign lesion and quite likely Doctor Andrews would have recognized it had not the shadowgraph been so deceptive.

DR. ANDREWS (closing): I have nothing to offer except to say the opening through the small intestine was no larger than the lead of a lead pencil.

I thank you all.

THE MANAGEMENT OF THE CHILD WITH A DEFECTIVE HEART

HERMAN M. JAHR, M. D.,
Omaha, Nebr.

This title was chosen for a definite purpose. Primarily, one must remember that the host of the defective organ should receive first importance in the scheme of treatment. This situation, simple as it may appear, is not usually taken seriously. I have seen more than one child wrecked physically and ruined psychologically, leading a life of invalidism because someone had found a murmur in his heart. In the past two months I have seen three emotionally crippled school children, one with a "slow heart", one with a "touch of heart disease" four years ago, and a third because her brother died of a congenital pulmonary stenosis at the age of three years. In each of these three cases the heart received all the attention, the child practically none. Their physical activities were limited to all but the necessary tasks, with the usual don'ts for play and activity. The emotional attitude in each case was that of the typically spoiled child because they "could not be crossed." They were weak from lack of sufficient muscle exercise and persistent refusal of "food that is good" for them.

These three youngsters in all likelinhood represent an extreme situation. Nor is this paper based on this particular observation. However, it is because of the frequency with which we see mismanaged lives in these youngsters that I have taken the liberty of pointing out a few of the simple principles which one may bear in mind in dealing with the child who is unfortunate enough to suffer from a defective heart.

The term "defective heart" is used for convenience of terminology rather than for its pathological description. We include:

a. Hearts that were subjected to inflammatory insults resulting in permanent changes.

b. Congenital hearts with murmurs as the only evidence of anomalous character.

c. "Potential hearts" in the child subject to rheumatic fever, or repeated occurrences of so-called "growing pains" with manifestations of easy fatigue, low resistance, rapid and soft pulse, but no apparent evidence of heart disease.

Group (a) would, therefore, include children who suffer from organic heart disease, chronicity following single or multiple acute attacks of endocarditis, carditis, or pericarditis or pancarditis on an infectious basis, the pathological process of which had left its marks on the valve, or valves (regurgitation or stenosis or both) and on the myocardium (hypertrophy or dilatation or both). The murmur is described best as soft and blowing or musical, and is heard best over the valve attacked, usually the mitral; at times both the mitral and aortic valves are attacked. (Aortic valvulitis alone is rare in the child.) The murmur is transmitted downward and to the left. The size of the heart varies with the extent of the infection and the number of acute attacks that the child had had. Thus there may be only slight enlargement hardly determinable by ordinary percussion and palpation of the apex beat, or the child may appear with a *cor bovinum* after the first attack of heart disease. These are the two extremes of hypertrophy and dilatation, but in between these extremes there is the mild and moderate enlargement with which the child usually recovers from the acute infection and reinfection.

In group (b) the congenital heart defects include the various structural anomalies of the heart such as septal defect, auricular or ventricular; valvular defects in which any valve may be imperfect in form, or anomalies of the large vessels, all contributing to produce murmurs. These murmurs are usually loud, coarse, and are not transmitted. These anomalies, unless they interfere with the circulation, physiologically they are otherwise unimportant.

Group (c) is an important group from the standpoint of proper care and study which they demand. Carelessness here means permanent damage which could be averted. Here I include the children with prospects for organic heart disease. The child with "growing pains" as he is usually described by the mother, who fatigues easily, and has a low grade fever, if not put to rest immediately is almost certain to blossom out with a full murmur and enlarged heart. This is a most important thing to bear in mind. In this category we may also place the child who made a full recovery from the first attack of acute endocarditis. It is not at all unusual for a youngster who develops endocarditis and receives early care to recover without enlargement and without a murmur. But these children need constant watching, because a recurrence of the disease frequently produces permanent damage.

The medicinal management of the child with acute heart disease needs no elaboration here. It is well discussed and comprehensively described in most of the text books on pediatrics. As a matter of fact rest and symptomatic treatment in an attempt to make the young patient comfortable is all that one can hope to attain, except perhaps for pushing salicylates in an effort to strike at the rheumatic infection. This phase of the treatment will not be discussed. There is only one observation I do like to make in connection with the management of this acute stage. In addition to treatment of the child one should never forget the family as a whole. Any long drawn out disease is discouraging. Among the diseases of childhood, with the exception of tuberculosis, perhaps, heart disease is by far the most discouraging of all. People usually associate heart disease with sudden death. They do not recognize the fact that the disease in the child runs an altogether different course from what it does in an adult.

It is well, therefore, after a diagnosis of heart disease has been made. to spend a little time with the parents and explain the situation to them. It is well to discuss with the family if they are anywhere near what might be termed intelligent, the etiology, pathology, prognosis, and whatever treatment one might choose to follow. I consider it neither unethical nor undignified to sit down and talk things over explaining as best I can the function of the organ and the extent to which the damage interferes with the physiology of the heart. Regardless of statements to the contrary by clever dramatists and mediocre journalists we, as physicians, have no secrets from the lay public. The more information they can absorb on the principles of health and disease the easier it will be for us to minister to their ailments.

Following the acute stage of heart disease there sets in a lengthy period of convalescence. During this time utmost care must be exercised in the physical well being of the young patient. Whatever activities are advised, the process must be very gradual. One must remember that he is dealing not only with a damaged endocardium, but indeed, with a weak myocardium. If the heart muscles escaped the infectious assault, the lengthy stay in bed with restricted activities produced a certain degree of flabbiness in the muscle and sudden exertion may bring about disaster. Aside from the building up of the heart muscle by gradually increased activity the general care of the child should not be overlooked. A sensible regime of his hygiene should be outlined carefully and every important item stressed minutely.

Food is a very important factor during this period but the taking of it by the child is frequently a problem not easily solved. In this critical period of difficult sales, our commercial friends in their desperate effort to push their products make nonsensical and bizzare statements of all sort with regard to the virtues of different foods. The mother, in an effort to do her best, is altogether too credulous in accepting these utopian promises. In an attempt to push "food that is good" she creates an attitude of disgust, and the child simply refuses to eat. As a matter of fact this situation is an unnecessary evil. Let the child eat what he likes and you will soon find that he likes practically all foods. No one denies the importance of a balanced meal with adequate allowance for minerals and vitamines, but coaxing and bribing and coercion has never appealed to me as a method of feeding. Personally, I feel that public education in the matter of nutrition is a complete failure because the education is incomplete.

Feeding during convalescence involves an important principle in metabolism. To begin with, during the acute illness the patient does not eat much. We know definitely that starvation tends to lower the metabolism. Therefore, when the child emerges from a partial starvation his metabolism is low and his appetite poor. Early in convalescence, therefore, I let the child eat not "what is good" for him, but whatever he likes. I never recommend bribing or coercion during this period, but I always advise tactful serving of the meal with no discussion of merits of the food given and no remarks on the quantity taken at a time. A vitamine crazed mother is given to understand that until further notice, she is to forget about vitamines and minerals and give the child *food*. I have used this method for over six years and I have yet to see the first case of scurvy, beri-beri, or pellagra, develop under this regime. As a rule the child's appetite improves, he begins to eat more, because his metabolism increases with the consumption of food.

During convalescence every effort should be made to add strength to the child. He should be made to gain weight. I am not a fanatic on weight charts and weight standards. Nor do I know, much to the consternation of my "intelligent" mothers, how much a child should weigh all the time. Somehow, when he does gain weight he looks better and feels more encouraged. Most children can gain weight, providing that the infection has quieted down, by proper feeding of simple and nourishing foods.

Drugs are usually unnecessary in this period, unless the patient is really anemic. Personally, I would rather rely on the improvement in the general condition when the blood count becomes equally satisfactory. This is especially true where the child offers no feeding problems. Feeding of internal organs are of distinct value for their iron contents, but these foods, unless they are properly prepared and carefully seasoned, are not very tempting to the appetite. I must confess a weakness for iron compounds. It seems to me they do good, because the color improves with their administration. This may be just a lull of conscience because of my early experiences with tonic-demanding mothers. For building up the heart muscle I like to rely entirely on carefully graduated exercises in preference to drugs. I seldom use strychnine; cod liver oil is not only of little value in heart disease, it is considered contraindicated because of its tendency to increase calcification in the damaged valve.

The mental hygiene during convalescence should receive careful attention. The child already has a peculiar frame of mind. Any prolonged illness with its attendant worry and solicitude on the part of everyone around him usually makes the child subject to much concern. Occupying as he does the center of attraction in the household and not infrequently in the neighborhood, gives him a certain amount of prestige with which he is rather loath to part suddenly. This attention should be withdrawn gradually and carefully as soon as the acuteness of the disease subsides. He should be taught independence and self reliance early. This without fuss and without preaching. Encouragement, in fact, is what he needs now, and every effort should be made to disperse the impression of invalidism. A child with a good myocardium is not an invalid.

It is in the chronic stage of heart disease that the child's problems really begin. And it is in this stage that the care and management is of greatest importance. Given a child, let us say, with mitral regurgitation, with slight hypertrophy of the heart muscle and with no evidence of impairment of the circulation, the question immediately arises, "What can this child do?" This question, as I see it, is not merely a medical problem. It has sociological and psychological phases. It is unnecessary to remark that in advising resumption of activities, school, play, etc., one has to be exceedingly careful in approaching an estimate of what work the heart can do without strain. There are several special tests to determine cardiac efficiency, such as the vital capacity in American clinics, renal volume tests in the German clinics, blood pressure tests, etc. But one can get along without these tests if he is careful in interpreting what the child can do without getting tired and breathless. After all that is the most sensible index of efficiency. One must evaluate the child's physical and emotional makeup in outlining a regime for rest and activity.

School work is an important feature in child life. Aside from its educational preparation there are certain intangible phases which must be taken into account. Advice for or against school attendance should be based on definite criteria. If the child is well nourished, his heart rate not unusually high, with good rhythm, there is little reason for the child's staying out of school. I have seen children who had not been to school for months because of a heart murmur, yet their activities at home were much more strenuous than had they attended classes. I have seen boys and girls skating up and down the street for hours at a stretch, yet a note from the physician stated that they are to be excused from physical training in school! Personally I do not like to limit the child's school activities if his heart is in good condition, in spite of the murmur. I feel that supervised play in the school yard is safer than aimless running and jumping on a busy street. I frequently advise against competitive games for children with damaged hearts but I question the consistency of this. When one sees the "Robber" game or the "Soldier" game in the neighborhood one marvels at the strength of the damaged organ. This fact was brought home to me not long ago. During a temporary breakdown of the power in our building, an eleven year old girl, who does not take physical training in school because of a mitral regurgitation with stenosis, walked up eleven flights for her regular bi-monthly check-up. Asked if she did not tire she replied, "Oh, it was lots of fun." Nor did her heart show evidence to the contrary.

A child with an imperfect heart, unless he has been trained otherwise, has a peculiar attitude toward those about him. He feels different. There are certain things that he is required to do and others that he is not permitted to do. From the nature of the condition this situation cannot be changed. After all he must be more careful than the child whose heart is intact. While his attitude cannot be changed, his outlook can be modified to his advantage. It has been my policy in dealing with a youngster who is old enough to reason with, to sit down and talk things over. By the aid of a couple of rough drawings done in the patient's presence I usually illustrate the outline of the heart (the muscle and valves, no names) and the principles of the circulation. The physiology is discussed briefly, then the pathology of the organ with particular reference to the individual process involved. It may surprise some of my readers to learn that the child is a very satisfactory subject for education. This feature occurred to me after observing the good results obtained in the training of the diabetic child by my colleague Dr. Frank Conlin. The value of educating the diabetic has long been recognized. The basic education of the individual with circulatory anomalies has hardly been attempted. Yet cardiac pathology with the aid of one or two simple diagrams lends itself to ready interpretation.

The value of proper education in this respect cannot be overestimated. The extent to which these enlightened youngsters are ready to cooperate is simply remarkable. As a rule they get into the spirit of the regime with an attitude of enthusiasm, hopefulness supplanting the feeling of despair. Introspectiveness and self-pity are undesirable traits in the healthy child. In the child with a defective heart these qualities are destructive in their effect. This type of child usually draws much sympathy from everyone around him. There is a reason for this which is not always appreciated. In the first place people look at him with a sense of pity because of his defect. Secondly, these children, because of their guarded activities, usually appear quiet and well-behaved. Thirdly, they are practically always good looking. Although no evidence of circulatory impairment may be recognized there is just enough sluggishness to impart a particular smoothness and a cyanotic tinge to their skin to justify the term we frequently used in Libman's clinic, "Mitral Beauties."

Although the child with heart disease is entitled to a certain amount of sympathy and consideration nothing is more hurtful to him than the constant solicitude and attention usually showered on him. It takes away whatever initiative he may possess and does not give him a chance to learn self-reliance so important in later years. The child should be let alone, and given the opportunity to self discipline. A defective heart is not a license to laziness or tyranny. The child is entitled to the same privileges accorded other children and he should be made to realize his duties and obligations to others. When well he should be active as his heart will allow and when ill he should be required to stay in bed until one day after the fever has subsided. He can, and should, be "crossed" if occasion demands, the same as other children. There is only one requirement that seems to me should be insisted on more in this type of child than in others, the afternoon rest. The child should be made to lie down for from one-half hour to an hour every afternoon regardless of his apparent well being.

The regime prescribed for the child with chronic heart disease may also be applied to the youngster with the congenitally defective heart.

The child with potential heart disease needs careful watching. As long as the rheumatic process is active he is in constant danger of the infection extending to the heart. He should remain in bed as long as fever and pain in the legs are present. The little girl above referred to remained in bed for six weeks with vague pains lasting four or five weeks. Her temperature never was below 100. The family tired of me after keeping her in bed six weeks and refusing to let her return to school. Four months later I was called in as consultant. The child had returned to school at the advice of an obliging physician and three months later had mitral regurgitation and stenosis with cardiac decompensation. A boy of seven years had "growing pains" with low grade fever when I first examined him. There was a definite systolic murmur over the mitral area transmitted downward and to the left. He was put to bed for eight weeks when not only the pains and fever disappeared but also the murmur. He has been well now for three years with no restrictions in activities. In these cases, too, it is necessary to be careful in advising a regime of treatment, special care being taken to avoid false alarms and harmful impressions. A diagnosis of heart disease is a serious thing, and one should be definitely certain of it before informing the parents of the child's status. Not all murmurs spell heart disease, although it is rare to find a child with heart disease without a murmur. On the other hand when one suspects impending rheumatic heart disease one is perfectly justified in informing the parents of the possibility and take necessary precautions by strict rest until these symptoms subside.

CONCLUSIONS:

The host of the defective heart should receive more attention than the heart itself.

The child with a damaged heart needs strict management and guidance since the defect is permanent.

Education of both patient and attendants is a most helpful procedure in the care of this type of child. The child can be educated in the principles of his welfare.

HEALTH PROGRAM IN THE PUBLIC SCHOOLS

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Every progressive movement has, when logically considered, advanced in three stages: First, through a vision; second, through propaganda, or the changing of that vision into the voice of the people; and third, through action, or the converting of mere propoganda into accomplished fact.

The doctrine of the science of health far antedates our present system of education. But, whereas it was more or less theoretical up to a comparatively recent date, it is today developing along practical dietetic lines undreamed of even a short decade ago.

When some years back a noted jurist made the statement that "As important as is the public school system, so important are the public school lunches,"—his was the vision.

When, a little later, the school nurse was introduced into the public schools, the propaganda quickly spread that the first and essential consideration in education is a fit and fed body. For the mind to be alert there must be physical fitness. And so the scale was introduced into the school house. The children were weighed, and the percentage of underweights that were found was alarming. With large numbers of from anywhere from 10% to 25% below normal, the necessity of emphasizing proper food values become patent. Charts were hung on the walls showing the basic values of certain kinds of foods; stressing the necessity of their consumption; dwelling on the thought that only through its children can a nation's health be maintained. Today yet, one of the first things that strikes one on entering a modern school-room is the oft-times artistic and always neat appearance of the blackboards, with captious and pithy phrases, deftly illustrated by clever drawings. Beneath these drawings in large letters often done in attractively colored chalks, one reads:

"An apple a day keeps the doctor away."

"Eat your way to health; eat fruit and vegetables, and drink plenty of rich milk daily."

"To grow big and strong drink plenty of fresh milk daily."

or perchance beneath the picture of a well drawn cow one may read,

"Skippity hop the cream's on top,
The moo-cow is our friend,
We'll take our milk, for every drop
Will health and vigor lend."

Etc., etc.

Now, while these drawings and this propaganda may and do work a good in disseminating a knowledge of proper food values and habits; while they may act as a guide to the class with whom financial problems are minimized, and to whom, owing to a happier economic adjustment, life offers no very grave difficulties; how about the child whose simpler but elemental wants and needs are, of necessity curtailed, if not entirely denied, due to an inadequate family budget?

To those of us who have had the opportunity to investigate, such attractive drawings and striking phrases excellent though they be in certain instances, are inadequate, if not supplemented by practical relief, and may lead to much serious trouble in those physically, and therefore oft-times psychically weakened by an actual want of food, or by an insufficient or poorly balanced diet. They suggest a sore temptation to the hungry, who daily read of the obvious road to health, and daily are denied it. The casual observer would be surprised at the percentage of children in the public schools of our land to whom this condition applies.

Besides those unfortunately unable to obtain proper and sufficient nourishment, there is another class of persons, who, were food necessities placed within their price, would only too gladly avail themselves of the opportunity thus afforded, but who must see their children both mentally and physically, as well as often morally, stunted, because instead of being *within*—such necessities are *without* the range of the family purse. Right here, then, are sown the seeds of a great and preventable three-fold wrong: The child's, and, therefore, the community's health is jeopardized; an incipient t. b. is nurtured; and the fodder for the maw of eleemosynary destruction and state criminal institutions is manufactured. All thinkers and educators admit that malnutrition is often the cause of failure and degeneracy, and that the children who have been insufficiently or wrongly nurtured, are later the men and women who find it hard to adjust themselves to the rights and demands of society. Proper attention paid to the diet of children would save many a later school, hospital, and prison bill. Hunger and fatigue, unquestionably lead to disease and desperation, and desperation leads to crime.

There is no doubt that the same causes produce the tardy or punctual child, the child who cries in the class-room or the happy one, the backward or the alert child, as produce the healthy or unhealthy chick, the brooding or frisky white mouse, the diseased guinea pig or its well developed twin. The slogan, "Clean milk made the difference," is endorsed not only in the laboratory, but has been proven in the school room as well. We are our bodies, and the first duty of the city and the first elemental step in education is to see that the tool is fit. Whenever we adhere to "the pound of cure" in place of "the ounce of prevention," criminalism, and pauperism, and disease, take the place of good citizenship and productiveness and health. In re-iterating that food is man's chief enemy or friend; that tuberculous children are very often undernourished children; that rickets, scurvy, xerophthalmia with its frequently resulting blindness, is largely found among the mal-nourished, and being infectious is often contracted by those in better circumstances; that insufficient food causes physical ills, mental inertia, and unstable nervous systems; that the foregoing diseases lead to invalidism or to a shortening of life, we are but stating well known facts and implying familiar propaganda. When we further quote from a bulletin of the Omaha Douglas County Medical Society that "It is safe to estimate that out of 18,000,000 pupils in the public schools of the nation, 3,000,000 are repeating a grade a second, third, fourth, or even fifth time, at a cost of approximately $100,000,000 per annum, an expense largely wasteful and preventable to say nothing of the loss of life efficiency," and when we also read that "this report is directed against one source of delinquency, namely, the undernourished condition of many of the pupils of the poor families of the city," we feel morally certain that action must be added to propaganda.

At the same meeting at which this report was given, we were asked, "Have we such conditions in our Omaha schools?" The answer was, "We have," substantiated by the following results of investigations by teachers: In many of the homes fathers and mothers had to be in their places of work early in the morning and the children were left to shift for themselves; accordingly many started the day with a bowl of left over chop suey; cake and water; bread and coffee. In a first grade of 36 children, 6 before coming to school had had a warm cereal or toast or milk, many coffee or water instead of milk; and in an alarming percentage merely bread and water. In other grades were totaled 19 who were coming absolutely breakfastless to school. At the same time a boy was having fainting spells in school, and his teacher discovered that it had been some time since he had had food, no breakfast at all, and no adequate meal for days. In a fourth grade a truant was questioned by his teacher, only to find that his truancy had been on account of a quest for food, sometimes at the city dump. One of the teachers who aided in the investigation sensed the situation very keenly in her statement, "If your child or mine had no lunch at all, or perhaps had a nickel and went to a nearby store and bought cheap candy, or to a restaurant and bought a piece of pie, or went home to an empty, cheerless, sometimes disordered room to eat perchance a stale roll with cold coffee, could he be expected to grow into a healthy normal being, be he black or white, American, French, English, Mexican or Italian?"

We also found that children, growing boys and girls, from more fortunate homes, were often below the average weight, and that to them, too, milk and graham crackers, with their inherent rest period, was much to be desired.

We felt that the data collected called imperatively for remedial measures, and thus five winter's ago I started serving milk in our schools, and also other nourishment when so requested by the principal. From one school the work rapidly spread, and today we are an incorporated organization working in twenty-four of our schools. This number will be augmented at the beginning of the new year.

The Public School Lunch and Milk Fund supplies gratuitously or below cost, or at cost where conditions warrant, milk and graham crackers, once or twice daily, as the principal in co-operation with the school nurse requests. Besides this daily distribution of milk, in certain of the schools where the need is felt, hot daily lunches are served, and in some, breakfasts of hot porridge, plenty of rich milk, and oftentimes fresh fruit. By this, the nurse's weighing is supplemented, and the child's weight quickly brought up to normal. Five cents buys the lunch, which, as a sample, may consist of potato salad prepared with diced bacon and onions (this dish is warm), a whole wheat bread sandwich, buttered and with a lettuce leaf filler, and a bottle of milk.

The Fund is maintained entirely through individual or club subscriptions. And now, with the Public School Lunch and Milk Fund in successful operation, we draw the curtain down upon the old, and having shown you that picture, ask you to look on this:

In the May, 1931, issue of Omaha Health News of which Doctor A. S. Pinto, City Health

Physician, is editor, we read: "The health of a city implies the health of its children as well as their increased disease-resistance. Omaha has gone a long step forward in the last four years, in a practical demonstration (substantiated by statistics), in the furtherance of a health program, which has proven the civic and economic value of money wisely expended along practical educational lines of preventive medicine; the newer medicine which believes that its function is just as much with discovering causes and rectifying them as it is with dealing with their results, i. e., disease. The Fund, by supplying additional nourishment at stated definite times to the growing girl and boy, builds up and thus side-tracks incipient disorders. Since the introduction of the nutrition classes in the grade schools, the common cold, mother of much trouble, has not been nearly so frequent, the children have been benefited in manifold ways, and the standard of school and community well-being accordingly raised." Among the salient features of the work accomplished by the Public School Lunch and Milk Fund, are:

A. The startling gains made in children below the average weight, even 20% underweights being brought up to normal at the end of the second semester. Hand in hand with this, are data showing that children who prior to this sustaining nourishment were marked for failure are making their grades; erstwhile tardy children are among the first at school in the morning; restive children develop poise; unruly ones become interested as a result of bodily well-feeling; a more regular attendance at school is noticed; better work is done because of a happier frame of mind; and discipline is more easily and less noticeably enforced.

B. The child's reaction is indicated by a composition which I have opened before me, written by a fifth B pupil, in response to the teacher's request for short essays by her pupils, on any topic which interested them most. To quote:

"June 1, 1931, English 5 B—

"I drink milk at school. I also drink it at home. Last night some other children and I were jumping over a rope playing a game called 'Build the Castle'. I can now jump as high as my waist-line. I couldn't do this before I started drinking milk. The milk gives me energy."

The fact that the teacher took the trouble to get the note to me shows her appreciation of the child's improvement and attitude.

C. The school's reaction to the work, which as yet is entirely optional with the principals, is shown by its growth:

We have never lost a school;
Whereas in 1929 we worked in two schools,
In 1930 we worked in twelve; and
In 1931 we worked in nineteen.
Whereas in 1929 we served 80 children daily,
In 1930 we served 700 daily, and
In 1931 we served 1,200 daily.
Whereas in 1929 we distributed 400 bottles of milk a month,
In 1930 we distributed 10,500 bottles of milk a month, and
In 1931 we distributed 19,681 bottles of milk a month.
When the schools closed for the Christmas holidays, we were serving 1,900 children a day in twenty-four schools, to be added to after the New Year.

With the knowledge that the placard on the school-room wall, "Milk relieves fatigue," is now vitalized by the actual giving of milk; that by the conversion of propaganda into action, no child need go without this basic health builder, but that all alike can travel on this road to health, we feel better satisfied.

With the data and the results as given in this paper, I cannot help but think that the day is not far distant when this work will be so firmly grounded, so well established, and so generally recognized as a fundamental need in our educational system, that one will wonder that there could have been a time when such an important and elemental necessity was not.

PRINCIPLES UNDERLYING REDUCTION OF PAIN IN THE POSTOPERATIVE PHASE OF ANORECTAL DISEASES

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Provided the diagnosis has been correctly made and the surgical procedure best suited for that particular type of anorectal disease has been executed, the next important step is to minimize the postoperative pain and discomfort. It is history among the laity that operative procedures around the rectum and anus are of the most painful nature but with the advance of proctology as a specialty more detailed consideration has been given to this phase of anorectal diseases. In the past most patients left the hospital with morbid reminiscences of an operative insult, although possibly successful in nature, reluctant to advise operation to others, particularly their friends.

There are two general principles which I believe should always be identified with the minimizing of the postoperative pain following anorectal surgery. First, I refer to cleanliness, although one would prefer absolute asepsis which we know is an impossibility. It is surprising how much the postoperative pain may be reduced by striving to prepare a clean field at least somewhat comparable to that in other fields of surgery. This may be accomplished by giving attention to a few particulars in the preoperative phase. The patient should take a mild cathartic about thirty-six to forty-eight hours previous to operation and then eat rather lightly on the day before operation. If a spinal anesthesia is to be used the colon should be irrigated the evening before operation with normal saline enemas repeated until returning clear. If the operation does not take place until after nine o'clock it is probably advisable to have the saline enema given early the morning of the operation, at least two hours before the time of operation. Under local infiltration, caudal or general anesthesia, colonic irrigation an hour before operation is without the disadvantage of an accident of a geyser character occurring on the operating table. When the patient is brought to the operating table and after the injection of the anesthesia, the rectum and surrounding surface areas are irrigated with a litre of a warm one per cent lysol solution. With the sterile gloved finger within the rectum, the irrigating nozzle is inserted and the lower rectum thoroughly cleansed. Granting the rectum is not completely sterile, nevertheless it has been thoroughly washed out with an antiseptic solution and any residue present in the bowel has been removed. Mercurochrome-acetone-alcohol solution is then applied to the anal and gluteal regions.

The second principle applicable to all anorectal operations is the preparation of the rectum for the first expulsion of fecal contents following operation. It is usually desirable to have the first bowel evacuation on the morning of the third postoperative day. During these three days the anal canal and rectum, particularly the raw surfaces, contain dry, inspissated blood and feces. The presence of this alone is irritating and at the act of bowel evacuation the feces passing this dry, unprotected area causes marked pain and distress. The amount of pain occurring during these three days may be greatly minimized by the following procedure: At the conclusion of the operation I always inject between one and two ounces of warm sterile vaseline into the rectum by means of a metal syringe or grease gun. This serves as a soft dressing and protection during these postoperative days and prevents dry crust formation. At the time of the first bowel evacuation the entire rectal wall and anal canal are coated with vaseline acting as a lubricant and protective dressing to the raw surfaces. The pain of this first bowel evacuation is further minimized by an injection into the rectum on the morning of the third day of six to eight ounces of warm cottonseed oil. If good results do not follow within an hour, this is supplemented by an injection into the rectum of a pint of normal saline. It is my custom never to give opium or bismuth or any other drugs "to tie up the bowels" during these first few postoperative days. The bowels do not want to empty after a rectal operation because of the reflex mechanism unless peristalsis has been stimulated. The administration of plain mineral oil or in combination with agar is begun on the evening of the second postoperative day and is continued through convalescence.

Lately for the local reduction of pain I have been using one per cent nupercaine ointment applied to the anus. Hot moist packs or dry heat to the anus may also be comforting at times but is by no means routine. Naturally the patient requires some morphine and codiene during the first two days and should always be permitted to have a restful night.

Liquid without milk is provided the patient the operative day and the first two postoperative days. On the third postoperative day the patient receives a soft diet and on the fifth day may go on a regular diet with care.

Although it is not the purpose of this paper to discuss operative technic it is surely apropos to repeat that no sutures should be inserted into the vicinity of the anus which would include skin or which would include fibers of the sphincter ani. Otherwise, severe postoperative pain is almost sure to follow.

For many years and even today by numerous surgeons it is thought necessary to always insert a rubber tube into the rectum at the conclusion of the operation. Usually a piece of gauze is wrapped around the tube. It is believed that the tube permits gases and feces to escape, thereby decreasing peristalsis and that the gauze is an additional protection against hemorrhage. Only recently I saw an excellent surgeon explaining in detail how he wrapped the gauze around the tube and how simple it was to remove the gauze. It is a known physiological fact that such a foreign body invites peristalsis and furthermore if one wishes to promote painful irritation around the normal rectum and anus just insert a tube into the rectum and leave it there six or eight hours. This irritation is frequently provoked following the usage of the colon tube in ordinary abdominal operations. To prevent hemorrhage it is absolutely unnecessary if the operator has been careful to ligate all bleeding surfaces. Personally, I never use a tube or packing and I am sure my patients are much more comfortable. Occasionally in a deep intrarectal abscess a strip of rubber dam not over one inch wide has been inserted into the anal canal.

The preceding remarks refer in general to the postoperative treatment of all anorectal diseases. I would also like to refer here to the postoperative treatment of several specific surgical procedures. Probably much to the consternation of many surgeons and contrary to what is frequently stated in text books, I do not believe in the firm and constant packing following an operation for ischiorectal abscess or following an operation for fistula. After incision and excision of the fistula or abscess the skin around the wound is widely saucerized which permits granulation at the bottom of the wound to occur without too rapid epithelization from the surface. The wound is then very lightly packed with a vaseline gauze strip which is removed in twenty-four hours. After this time packing is no longer used. Daily the wound edges are separated with the sterile gloved finger, irrigated with a warm 1-10,000 potassium permanganate solution or a boric acid solution and then a fifteen per cent balsam peru and castor oil mixture is instilled into the wound. Dry or moist heat may be comforting although this is frequently unnecessary. After the patient is able to be up and around, and I permit the patient up in three to seven days, hot sitz baths at least once a day are advisable. After every defecation, cleansing of the wound by means of a hot sitz bath or an external irrigation is necessary. As the healing process goes on it becomes necessary to only dress the wound every two or three days until healed. This postoperative treatment decreases the discomfort of a wound packing and removal, encourages healing from the depth of the fistula and lessens scar formation and deformity.

COSTLY ERROR

First Young Doctor (to second ditto): "Hello, old man, what's the matter? You're looking very glum."

"No wonder." was the reply. "I'm attending that wealthy Mr. Golding, you know, and I've sent him the wrong medicine."

"Indeed! Is it a serious blunder?"

"Very serious! The medicine I've sent him will cure him in two days!"

COUNCILOR ANNUAL MEETING NEBRASKA STATE MEDICAL ASSOCIATION

JANUARY 18, 1932

The annual meeting of the Councilors was held at the Omaha Athletic Club in Omaha, January 18, 1932, at 6:30 p. m. The meeting was called to order by Dr. Rork. The following members of the Council were present: Drs. Overgaard, Lehnhoff, Boyer, Cook, King, Davis, Potter, Douglas, Bryson, Rork, Selby, Cooper, President Stark and Past-president Hohlen. In addition to these the following guests were also present: Drs. Fouts and Secretary Adams and the Journal Committee consisting of Drs. Bailey, Long and Tyler. Out-going Councilor Dr. Nielsen, Dr. Heagey of the Public Activities Committee, Dr. Welch, chairman of the Council on Medical Education, Dr. Herman Jahr, Secretary-Treasurer of the Omaha-Douglas County Medical Society, and Mr. Gene Huse, publisher of the Journal, were also guests.

Dr. H. J. Lehnhoff was elected president of the Council and Dr. Overgaard re-elected secretary for the ensuing year. The regular order of business was then taken up.

The Secretary's report was read by Dr. Overgaard. Motion was made that this report be received and placed on file and that the Secretary be complimented on his work during the past year, being able to show a definite gain in membership. Seconded and carried.

The report of the Program Committee was read by Dr. Overgaard. Motion was made that this report be received and placed on file. Seconded and carried.

The report of the Committee on the Cost of Medical Care was read by Dr. Overgaard. Motion was made that the Council receive the report of the Chairman of this Committee and that a continuance of the Committee be made. Seconded and carried.

The report of the Campaign Committee was read. Motion was made that this report be received and placed on file. Seconded and carried.

The report of the Committee on Medical Education and Legislation was read by Dr. Welch.

It was suggested that the reports of the Special Committee and the Public Activities Committee be made before the report of Dr. Welch was passed on.

Dr. Rork read the report of the Special Committee.

Dr. Heagey read the report of the Public Activities Committee as Dr. Hays, chairman of this Committee was unable to be present.

Motion was made that the report of Dr. Welch be received and placed on file for further consideration, that this report be published and that the Committee be continued. Seconded and carried.

Motion was made that the report of the Special Committee be received and that the Committee be commended for their labor and valor in their efforts to try to do something and that they be discharged. Seconded and carried.

Motion was made that the report of the Public Activities Committee be received and placed on file. Seconded and carried.

Dr. Selby made his report on the Insurance Committee. Motion was made that the report as read by Dr. Selby be received and placed on file. Seconded and carried.

Dr. Fouts' report of the Defense Committee was called for. Dr. Fouts asked for more time to make up his report as it was not yet complete.

As it was necessary for Dr. Lehnhoff to leave Dr. Stark was asked to take his place as president of the meeting.

Dr. Long read his report of the Journal Committee. Motion was made that this report be received and placed on file. Seconded and carried.

Dr. Overgaard read the report of the Student Loan Fund Committee. Motion was made that this report be received, placed on file and published. Seconded and carried.

The financial statements were read by Dr. Adams. It was moved that these statements be turned over to the Auditing Committee. An Auditing Committee consisting of Drs. Douglas, Bryson and Cook was appointed by Dr. Stark.

Dr. Bailey read his report of the Committee on Public Policy and Legislation. Motion was made that this report be received and placed on file Seconded and carried.

The Auditing Committee reported that it found the Secretary-Treasurer's report correct and recommended that the reports be received. Motion was made that these reports be received and published. Seconded and carried.

Motion was made that the meeting adjourn. Seconded and carried.

—R. B. Adams, Secretary-Treasurer.

REPORT OF COMMITTEE ON JOURNAL AND PUBLICATION FOR 1931

Despite adverse conditions the Committee on Journal and Publication feels justified in bringing in an optimistic report for the year just passed. The Statement of Cash Receipts and Expenditures which is before you indicates that $117.75 more was collected for advertising during 1931 than during 1930, while the publication expense has been $305.17 less for the corresponding period.

The lessened publication expense is largely due to two things—a smaller number of cuts and cuts of smaller size and to a lesser number of extra copies published.

We began the year 1932 with 20 advertising pages in the January number of which one page is filler; whereas we had carried above 24 pages —sometimes 28 pages—of advertising the past year.

This must serve to guard us in planning for the future.

The Journal published 500 pages of reading matter in 1931. There were published 96 original articles occupying about 300 pages. The editor personally furnished 782 inches or the equivalent of about 88 pages of material or about 1/6 of the Journal for the year.

It is proper to state that the publication board which has functioned as a happy family ever since the Journal was established in 1916, without a break in membership, is about to break its tie in the retirement, on account of illness, of Dr. W. O. Bridges. His ideals and counsel will be greatly missed. At the same time we welcome Dr. A. F. Tyler to membership in this body.

The committee feels that with the appropriation of $1.50 per member by the House of Delegates to the Journal Fund for the ensuing year the Journal work can go on with reasonable prospect of a balanced budget at the end of the year 1932.

—F. A. Long, Chairman.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION TO THE COUNCIL OF THE NEBRASKA STATE MEDICAL ASSOCIATION, JAN., 1932

Your committee recommended two important things at the last State Medical Association meeting:

1. Postgraduate work for doctors over the state.

2. Early selection of an Executive Secretary or Director, to serve under the Council.

We were pleased with the earnest consideration given our recommendations. We feel certain they are constructive. We expected difficulties. These appeared. Some were financial. Some based on difference of opinion. Some men felt the plan contemplated too rapid and too big a change. Doubt and general uncertainty necessitated further consideration before obligating our organization. Our committee was pleased to have these recommendations referred for further consideration to a group comprised of the president of the Council, the president of the Association, the secretary of the Association, and one member of our committee.

This body has deliberated and will doubtless report to the Council at this time. The following quotation from its report to our committee is highly satisfactory: "It is believed that such an officer (Director) would be of great value to the Nebraska State Medical Association. In addition to the promoting of the educational plan his relationship with the personnel of the organization would enable him to foster a better state of professional health in the county societies, to increase the membership, to interest the members in the vital necessity of adequate protection and to advance the standard of ethical relationship between the members.

"The work of such an officers under the direct control and supervision of the Council could offer relief from much of the drudgery now required of other departments in the organization, it would also avoid duplication of service.

"It is the opinion of the committee that a permanent revenue from the educational program sufficient to adequately reimburse a full time director and support the program, is problematic. The committee is opposed to, in any way, producing a drain on the general funds or to any action that would require an increase in dues.

"It is, therefore, suggested that inasmuch as all of the director's time would not be occupied with the administration of the educational program, that a part of the work now done by other departments and the work now done by the Public Activities Committee, be merged with the work of the educational program, and thereby securing adequate funds to permanently support this office, and any excess amount derived from the educational program would revert to the general fund."

Your committee on Medical Education agrees and urges the acceptance of these recommendations:

1. Secure a director or executive secretary.
2. Assign him any tasks under the control of the Council, such as
   (a) Defense Committee work.
   (b) Public Activities Committee work.
   (c) Certain Journalistic duties now done by recording secretary's clerk.
   (d) Campaign and legislative work.
   (e) Health education through various lay avenues, and
   (f) Later, postgraduate work, when acceptable to doctors.
3. Budget this director's salary and expenses from part-time salaries and expense allowances already in our program.

We believe this to be an advance step for the Association. Better co-ordination of effort will result. A more continuous flow of activity will follow. Many activities now attempted by part-time men and volunteer committees should proceed to better results. Naturally these committees would not be abandoned. We would most certainly need their counsel and advice, their initiative and urge, but the director would relieve them of the drudgery, detail, and execution of their opinions under orders of the Council.

We believe the present budget of the Association would provide for the necessary expense of the office and leave a fairly attractive salary for the director.

—J. Stanley Welch, Chairman.

STUDENT LOAN FUND REPORT

Our first year of activity shows that we have made three loans, and the unusual financial condition of this country has made an enormous demand on us for assistance by students in financial distress. While we received our money the first part of the year, yet it was September before two of our loans were completed. This year, of course, there has been an unusual demand, therefore, we recommend that provision be made so that the appropriation of $500.00 be made available for the Committee, September first, of each year, in order to conform with the opening of the medical schools during September of each year.

We hereby wish to express our appreciation of the cooperation and assistance we have had from Deans Schulte and Poynter.

RESOURCES

February 2, 1931, Received from Secretary R. B. Adams	$500.00
September 14, 1931, Interest on Loan No. 1	3.00
Overdrawn	1.15
Total	$504.15

DISBURSEMENTS

March 16, 1931, Loan No. 1	$100.00
April 4, 1931, J. P. Cooke Co., Rubber Stamps	1.35
April 8, 1931, Omaha Printing Co., Record Books	2.80
Sept. 22, 1931, Loan No. 2	200.00

Oct. 1, 1931, Loan No. 3	200.00
Total	$504.15

F. A. Long,
H. J. Lehnhoff,
A. P. Overgaard,
Committee.

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1931 to December 31, 1931

Cash Receipts:		
Membership Dues	$9,456.00	
Interest	6.19	
Dr. Selby for letterheads used by U. S. F. & G. Co.	22.51	
Total Cash Receipts		$9,484.70
Cash Transferred to other Funds:		
Journal Fund	$1,773.00	
Defense Fund	2,364.00	
Total Cash Transferred		4,137.00
Balance available for General Fund		$5,347.70
Cash on Hand, January 1, 1931		1,419.30
		$6,767.00

Cash Disbursements:		
Salaries—R. B. Adams		$ 600.00
Office and Administrative Expense:		
Rent	$ 180.00	
Telephone	87.75	
Printing	61.51	
Bank Charge	7.00	
Stamps	92.00	
Sec. of State	1.00	
Dr. F. A. Long (1931 expense)	47.10	
Insurance Premium	5.00	
A. M. A. (Cards and Directories)	31.50	
Multigraph Letter Shop	2.14	
Typewriter for meeting	2.50	
Miss Runge	7.00	
L. C. Smith, Typewriter	60.05	
Brief Case	4.75	589.80
Miscellaneous Expense:		
Councilor Expense	$ 311.21	
Huse Publishing Co., Programs	53.20	
Program Committee	12.50	
Speakers at Meeting	195.30	
Perry, Van Pelt & Marti Campaign Committee	300.00	
Dr. Lucien Stark, Pres., Expense	75.00	
State Fair Committee	297.00	
Public Activities Committee	1,200.70	
Dr. E. R. Hays, Salary	1,000.00	
Circulars Insurance Committee	132.05	
Student Loan Fund	500.00	4,107.95
Convention Expense:		
R. W. Fouts	$ 96.59	
B. F. Bailey	101.06	
J. Stanley Welch	62.34	
Alice Cary Gilchrist	132.00	391.99
Total Disbursements for Year 1931		$5,689.74
Balance Cash on Hand, December 31, 1931		$1,077.26

STATEMENT OF INVESTMENTS

January 1, 1931 to December 31, 1931

Investments on Hand, January 1, 1931:		
Cash Held by Omaha National Bank	$ 184.39	
Securities Held by Omaha National Bank	4,570.00	$4,754.39
Balance in Account—Omaha Loan & Bldg. Assn.		1,526.70
Balance in Account—Conservative Sav. & Loan Assn.		2,993.95
Balance in Account—Nebraska Central Bldg. & Loan		1,747.15
Balance in Account—U. S. Savings & Loan Assn.		1,123.35
		$12,145.54
Additions to Investments During Year 1931:		
By: Interest Credits—Omaha National Bank	$186.50	
Transfer from Income Account—Omaha National Bank	200.00	
Dividend Credits—Omaha Bldg. & Loan	69.46	
Dividend Credits—Conservative Sav. & Loan	136.25	
Dividend Credits—Nebr. Central Bldg. & Loan	92.93	
Dividend Credits—U. S. Savings & Loan	16.84	701.98
		$12,847.52
Withdrawals During Year 1931:		
Trustee Fee Year Ending January 1, 1932	$ 16.82	
Transfer to Principal Account	200.00	216.82
Investment on Hand January 1, 1932		$12,630.70
Represented by:		
Cash Held by Omaha National Bank	$ 154.07	
Securities Held by Omaha National Bank	4,770.00	$ 4,924.07
Balance in Account—Omaha Bldg. & Loan Assn.	$1,596.16	
Balance in Account—Conservative Sav. & Loan	3,130.20	
Balance in Account—Nebraska Central Bldg. & Loan Assn.	1,840.08	
Balance in Account—U. S. Sav. & Loan Assn.	1,140.19	7,706.63
		$12,630.70

DEFENSE FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1931 to December 31, 1931

Cash Receipts:			
Shares Dues Received from General Fund		$2,364.00	
Interest Received		3.61	
Total Cash Receipts			$2,367.61
Cash Disbursements:			
R. W. Fouts, Salary		$600.00	
Attorney Fees:			
H. A. Bryant	$225.00		
Swarr, May & Royce	220.00		
Fred N. Hellner	181.25	606.25	
R. W. Fouts, expense		50.81	
Total Cash Disbursements			$1,257.06
Excess Cash Over Disbursements			$1,110.55
Cash on Hand, January 1, 1931			$1,014.18
Balance on Hand, December 31, 1931			$2,124.73

STATEMENT OF INVESTMENTS

January 1, 1931 to December 31, 1931

Investments on Hand, January 1, 1931:

Cash Held by Omaha National Bank	$ 168.92	
Securities Held by Omaha National Bank	2,800.00	
Balance in Account—U. S. Sav. & Loan	1,123.35	
Total January 1, 1931		$4,092.27
Interest Credited During Year:		
Omaha National Bank	$ 142.72	
U. S. Sav. & Loan Assn.	16.84	
Transferred from Income Account:		
Omaha National Bank	200.00	359.56
		$4,451.83
Cash Transferred:		
Trustees Fee for Year Ending 12-31-31	$ 77.80	
Transfer to Principal Account	200.00	277.80
Investments on Hand, January 1, 1932		$4,174.03
Represented by:		
Cash held by Omaha National Bank	$ 33.84	
Securities held by Omaha National Bank	3,000.00	
Balance in Account—U. S. Sav. & Loan	1,140.19	$4,174.03

JOURNAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

January 1, 1931 to December 31, 1931 as compared to January 1, 1930 to December 31, 1930

Direct Journal Receipts:	1931	1930
Advertising Space	$5,044.63	$4,926.88
Cuts	122.69	148.00
Copies Sold	8.05	14.22
Subscriptions to Journal	25.00	47.00
Dividend Cooperative Adv.	380.66	308.71
Dr. E. R. Hays, for printing	5.00	
Total Direct Receipts	$5,586.03	$5,444.81
Share Dues Rec'd.—General Fund	1,773.00	1,761.00
Total Receipts—All Sources	$7,359.03	$7,205.81
Direct Journal Disbursements:		
Salaries:		
Dr. F. A. Long	$1,200.00	$1,200.00
Dr. R. B. Adams	1,300.00	1,300.00
	$2,500.00	$2,500.00
Publication Expense:		
Huse Publishing Co.	$4,519.72	$4,373.71
Baker Bros. Eng. Co.	181.89	623.59
Bank Charge	3.95	3.43
Uni. Press	42.00	42.00
Total Direct Disbursements	$7,247.56	$7,542.73
Excess Disbursements over Cash		$ 336.92
Excess Cash over Disbursements	$ 111.47	
Cash on Hand January 1	433.03	769.95
Total Cash on Hand	544.50	433.03

STATEMENT OF INVESTMENTS

January 1, 1931 to December 31, 1931

Investments on Hand January 1, 1931:			
Balance in Account—Omaha Loan & Bldg. Assn.			$2,935.16
Balance in Account—Standard Savings & Loan			1,582.30
Balance in Account—Union Loan & Savings Assn.			2,005.44
Balance in Account—U. S. Savings & Loan Assn.			1,123.35
Total January 1, 1931			$7,646.25
Additions to Investments During Year:			
Represented by:			
Dividend Credits—Omaha Loan & Bldg. Assn.:			
July 1, 1931	$66.04		
December 31, 1931	67.52	$133.56	
Dividend Credits—Union Loan & Savings:			
July 1, 1931	$50.13		
December 31, 1931	51.40	101.43	
Dividend Credits—U. S. Savings & Loan:			
December 31, 1931	$16.84	16.84	
Government Bonds—Omaha National Bank:			
Transfer from Standard Savings & Loan Assn.	$300.00		
Interest	15.77	315.77	
Total Dividend Credits During Year		$267.60	
Investment During Year—Omaha National Bank		300.00	$ 567.60
Withdrawal from Standard Savings & Loan Assn.			300.63
Total Investment on Hand January 1, 1932			$7,913.22
Represented by:			
Balance—Omaha Loan & Bldg. Assn.			$3,068.72
Balance—Standard Savings & Loan			1,281.67
Balance—Union Loan & Savings			2,106.87
Balance—U. S. Savings & Loan Assn.			1,140.19
Total January 1, 1932			$7,913.22

TABETIC ARTHROPATHIES

Arthur Steindler, Iowa City (*Journal A. M. A.*, Jan. 24, 1931), relates his observation of sixty-four cases of arthropathy involving ninety-nine joints. Of these, only two, or possibly three, were definitely non-tabetic. In three cases, a diagnosis of cerebrospinal syphilis was nade, and it is possible that in these the arthropathy was an advance symptom of oncoming tabes. He discusses the etiology, pathogenesis, pathology, microscopic pathologic changes, pathologic changes disclosed by roentgen rays, symptomatology, and treatment. Of his 64 cases, 42 were treated conservatively; 12 cases (15 joints) operatively, and 10 cases were not treated. The conservative treatment consisted in alignment and support by braces or casts, and in physical therapy; i. e., massage, exercises and muscle reduction. Of the 42 cases conservatively treated, 24 improved, 12 cases showed no change or got worse, and in 6 cases the result of treatment remained undetermined because of the shortness of observation time. As satisfactory result was considered an arrest of the destruction in the joint and such improvement in function as would result from adequate stabilization of the joint by portative apparatus. Twelve patients, in whom 15 joints were involved, were operated on. Of these 9 joints showed improvement of function, 5 were not improved and 1 case was undetermined.

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THE ROBERT KOCH ANNIVERSARY

The fiftieth anniversary of the discovery of the tubercle bacillus by Dr. Robert Koch is to be appropriately celebrated this month. The work of Koch places him on the pedestal as the outstanding medical genius of modern history and as one of the greatest men of science the world has ever produced.

In 1890 the death rate from tuberculosis was 254 plus, per 100,000; in 1910 it was 160 plus, per 100,000; in 1922 it was 9 per 100,000; in 1930 it was 68 plus, per 100,000 (in Nebraska 24 plus, per 100,000.) This is directly traceable to the work of Koch fifty years ago.

Robert Koch was born at Klausthal, Germany, in 1843, was graduated in medicine at Gettingen in 1866, served in the Franco-Prussian war and later became *Kreis-physicus* or district physician at Wollstein, a political appointment corresponding to that of a country doctor in the United States. The monotony of this life was varied by microscopic studies.

In 1876 he announced his discovery of the cause of anthrax by working out the complete life history and sporulation of the anthrax bacillus. During the following few years he "published his methods of fixing and drying bacterial films on cover slips, of staining them with Weigert's analin dyes, of staining flagellae, and of photographing bacteria for identification and comparison. * * * * described the bacteria of six different surgical affections * * * * method of obtaining pure cultures of organisms by spreading liquid gelatin with meat infusion upon glass plates, forming a solid coagulum." This work elevated him to the foremost rank in medical science.

In 1882 he announced the discovery of the tubercle bacillus and from this date begins the modern concept of the treatment of tuberculosis with results stated in a previous paragraph.

He discovered the cholera vibrio in 1883 and found the micro-organisms of Egyptian ophthalmia (The Koch-Weeks bacillus), the same year. For this latter discovery the Prussian state gave him a donation of 100,000 marks (about $25,-000).

He became Director of the then newly organized Institute for Infectious Diseases in 1891.

Later he became professor of hygiene and bacteriology at the University of Berlin and had as pupils such men as Loeffler, Welch, Pfeiffer and Kitasato.

In 1896 he investigated *Rinderpest* in South Africa, and later made valuable studies of Texas fever, blackwater fever, the plague, malarial fever, trypanosomiasis.

In 1905 Koch received the Nobel Prize. In 1906 he was the head of the African Sleeping Sickness Commission. He was honored by membership in the Prussian Academy of Science and the title of *Excellenz*. His later life was embittered by some domestic incidents which brought on him much harsh criticism.

He died of a heart affection at the age of sixty-seven.

The National Tuberculosis Association and its auxiliaries throughout the country will commemorate this event March 24, and coincidently introduce an Early Diagnosis Campaign.

ANNUAL MEETING PAPERS

If you wish to present a paper to the annual meeting of the Nebraska State Medical Association in May, please send title of paper as soon as possible to the office of the secretary, Dr. R. B. Adams, Center McKinley Building, Lincoln.

ANNUAL DUES

Those whose dues are not paid, are delinquent and of course suspended from membership and not entitled to the benefits of Medical Defense or the *Journal*. Eight dollars plus your county society dues sent to your county secretary at once will reinstate you—and you'll be "happy ever after." Do it now.

NEBRASKANS' CONTRIBUTION TO THE CHIENGMAI LEPER ASYLUM

Almost like a fairy tale reads the story of the Omaha and Nebraska background to the leper colony at Chiengmai, Siam. Let us review the history as it pertains to our own.

Dr. James W. McKean, a native of Iowa and graduate of Bellevue Hospital Medical College, 1882, first located at Auburn, Nebr., but after several years, in 1887, located in the Walnut Hill addition to Omaha, where he soon acquired a desirable practice. Having become imbued with the missionary spirit, Dr. and Mrs. McKean, decided to enter medical missionary service in the Far East and left Omaha in 1889 for Chiengmai, Siam, where they labored for forty-two years (1889-1928) until retired and now live at Claremont, Calif.

Strangely, when Dr. McKean was about to leave Omaha for his life work, the minister of the local church induced a friend of his, Dr. Harry M. McClanahan, then of Alexis, Ill., to locate in Omaha and in doing so Dr. McClanahan took over the property of Dr. McKean and remained on that very site where he first settled all the remainder of his days. Dr. McKean and Dr. McClanahan became interested in one another and maintained a correspondence through all the years.

In 1924 Dr. McClanahan informed Dr. McKean that he desired to provide something for the Leper Asylum that should be in memory of Mrs. McClanahan, then recently deceased. In 1925, while Dr. McKean was in Omaha on furlough, Dr. McClanahan subscribed $5,000, to which he later by will added $500 more. In 1926 Dr. McClanahan visited Dr. McKean at Chiengmai. In 1930, after Dr. McClanahan's death, the McClanahan Memorial Community House was dedicated. It is not a clinic, but a recreation hall for lepers. Its general appearance and stately columns as indicated in the cut herewith indicate a structure that will endure for a hundred years and, indeed, we are assured it will and more, too.

This interest and generosity on the part of Dr. McClanahan brings before us another angle of the kindly human interest possessed by this talented, beloved pediatrician.

Other Omaha physicians took a substantial interest in the leper colony at Chiengmai. Dr. J. M. Aikin, a former secretary of the Nebraska State Medical Association and also, at the time of his death, editor of this *Journal*, made the very first contribution to Chiengmai Leper Asylum, and the late Dr. J. M. Patton built six small cottages in the Asylum.

McCLANAHAN MEMORIAL COMMUNITY HOUSE AT CHIENGMAI LEPER ASYLUM
(Cut kindly loaned by Women and Missions magazine, New York)

Dr. McKean spent his entire missionary life, first in general medical and evangelistic work, then as superintendent of Chiengmai hospital and later as superintendent of the Leper Asylum which was established in 1908. He also translated the Scriptures into the Laos language. He was decorated by the King of Siam with the Insignia of Knight of the Order of the White Crown of Siam. Dr. J. W. McKean's son, Dr. Hugh McKean, has succeeded to the superintendency of Chiengmai hospital.

Those of us who do not have the missionary spirit cannot fully appreciate what men like Dr. McKean, Dr. McClanahan and others have done in far away mission fields. This *Journal* gladly pays this slight tribute to their work.

THE NURSE ON HORSEBACK IN THE KENTUCKY HINTERLAND

A real human interest story entitled "Frontier Nurses on Horseback Combat Disease, Poverty, Medieval Ignorance, in Isolated Region of United States" is on our desk. It refers to nursing and medical care in the remote mountain regions of Kentucky. Here in, ordinarily, carefree Nebraska, we cannot well grasp a situation such as exists as told in this "Release" which comes from the Committee on the Cost of Medical Care. This editor had contact with a nurse several years ago who had been in this service and was prepared for the story to which this refers.

There are settlements in the remote mountain regions of Kentucky, miles and miles away from towns where physicians are located and which places can be reached by bridal paths only. These people are ignorant and poverty stricken, live in shacks or log huts and battle with hookworm, tuberculosis and typhoid.

A Frontier Nursing Service was endowed for these people some few years ago. Nurses with obstetric training take care of the average confinement cases. They do a general nursing service and within certain limits they treat patients pending arrival of medical aid. Physicians, when called, are paid in part by the patient or his friends—paying what they can pay—and the endowed Nursing Service underwrites the balance. This is a situation hard to imagine and yet it exists in the hinterland of a near-by prosperous state.

SOCIAL MEDICINE AND THE MEDICAL PROFESSION

On every side and in the most innocent manners, one sees social medicine pushing itself in upon the practice of the medical profession.

What are some illustrations?

What evil influences are resulting to the profession?

What evil influences are resulting to the public?

What should be done by the medical profession?

What can be done?

Illustration No. 1:

Lady over phone: "Hello, Doctor. This is Mrs. Gray. I want to ask you a question. My boy came home from school today with a note from the SCHOOL NURSE. It says he should be immunized against diphtheria, and that we should take him to our doctor and have this done, or if we wish, the school doctor and nurse will do it for us. Now what I want to know is, is this O.K.?" You say it should be done. "Well, can you do it for us?" Yes. "What will it cost?" "Five dollars?" "Well, if this school (public tax money) will do it for us, why not let them do it? Can they do it safely?" "Well, thanks, Doctor. If you think they can do it and it should be done, we'll let them do it. Five dollars is five dollars these times. Thanks. Goodbye".

Here you have the doctor making the final sale to the patient of a perfectly proper piece of practice, but instead of getting the professional business himself he not only loses the work but pays the school district for doing it.

Illustration No. II:

A letter to Dr. G. B. C. The envelope bears the return sign of the Secretary of the Y. W. C. A. The letter within reads: "Dear Dr. C. Would it be imposing to ask you to teach a few classes for us this season? The Public Health Department has sent us some literature which seems to have resulted from the Child's Welfare Conference at Washington last year, and they urge us to get this information to our women. The facts in the matter are, several women have asked for prenatal instruction and some others for sex hygiene, some of the very subjects the Public Health Department wish taught. We asked the County Medical Society and they said neither they nor the State Association had any provision for such instruction. One woman volunteered to get a nurse to do the teaching, and I find she is a good intelligent woman with much practical experience, but she is not even a registered nurse. What can you—", etc.

Here you have another common urge—yea, a demand for health education, and no provision for leadership where leadership belongs—in the medical profession.

Here we have the tax-provided school district paying one of our profession to advise them what is safe and sane and proper for the health of our children, and yet we as a profession have set up no machinery even to meet the need, when in reality we should have conceived, first the way to handle it, and then next put the execution in process.

What evil influences are resulting?

You say it is taking work away from the doctor to whom it belongs. Yes, but that's not new.

Doctors constantly do things for humanity which lessen their practice—prevention rather than cure, constantly illustrates that factor. A much greater evil lies in the constant tendency to "Hired Doctors"; "State Medicine"; "Industrial Medicine"; "Charity Clinics" (often where charity is not needed). It tends more and more to municipal, county, state, and federal hospitals and doctors. And I ask you again to stop and estimate how much the practice of medicine and the care of the sick and injured will degenerate as we go farther into this type of practice. I ask you who will suffer most—the doctor or the people; and every doctor will answer in the same usual altruistic way, "the people."

What can be done about it?

Take at once some active step in health education leadership. Set up an organization in the State Association to direct this leadership in county societies, with the Extension Departments of our universities and colleges, who are literally begging the State Medical Association to come to their aid, with health education in meeting thousands of women in mothers clubs, children and youths 4-H clubs, parent-teacher groups, etc. These demands are reflected in the Public Health Departments, the schools, the lay clubs. They are demanding this education. We must soon appreciate this new responsibility as ours of the medical association. We have here an honest debt to pay. We must get in and lead all of this volunteer energy being supplied by lay and semi-medical groups, before we are in a worse rut with more and increasing mistakes to correct.

Most of these laymen are our brothers and sisters with children of our own blood. They are as profoundly interested as we dare be in the lasting welfare of these children—the future community. Their intentions are the best in the world and if their lay minds illy advise them how to proceed while we neglect to step in with a directing organization, it is *honestly* more our fault than theirs.

Your committee on Medical and Health Education and your Public Activities Committee are literally shouting these things at the Council and the State Association. These two illustrations are actual facts and can and will be duplicated as space and opportunity present. As a member of both of these committees, I consider it my duty to bring again and again these convictions before your minds. There is no haste and no heat behind this conviction. We respectfully request you to weigh carefully these problems and do some constructive planning. Our plan may not be the best. If not, please help us improve it.

—J. S. Welch,
Lincoln.

THROMBOSIS OF LATERAL SINUS

John B. Potts, Omaha, in a paper read before the American Medical Association at Philadelphia (*Journal A. M. A.*, Jan. 30, 1932), believes that if, in a case of mastoid infection under observation, either preoperatively or postoperatively, there suddenly develops a high temperature (from 104 to 105 F.), which as suddenly drops to nearly normal with or without a chill, and coincidentally there occurs a rapid increase in the white blood cells with an increased percentage of polymorphonuclears and a reduced hemoglobin, and if at the second rise of temperature the lateral sinus is exposed and instead of a normal thin-walled blue sinus there is found one that is grayish white with the wall apparently infected, but which on testing is found to be patent and bleeds freely, one is justified in attempting to localize the infection at this time. He suggests that, instead of waiting at this crucial time, one expose the sinus until the normal sinus wall is uncovered at both ends, if this is possible, then block the distal end and the proximal end in the usual way, take a roll of iodoform gauze about the size of a lead pencil, and gently pack this firmly into the sinus groove, obliterating the lumen from plug to plug, thus leaving the sinus empty. By this procedure the sinus is emptied of the medium which furnishes a culture for further growth, and, with the original infecting focus removed, nature has to combat only the infection in the sinus wall. This procedure at the same time localizes the infection and protects the host from danger of an infected blood stream. If the sinus wall is extensively infected, it may break down and a localized abscess may develop which will obliterate the sinus. If the process has not degenerated to this extent, the infection of the sinus wall subsides, and when the packings are removed the sinus resumes its normal function. In either case, the course of the disease has been arrested. The objection may be raised that if a mural thrombosis is present it may be dislodged. If the gauze is packed in gently, however, this danger is remote. Also, it can be said that sinuses may be packed unnecessarily. Packing a normal sinus will do it no harm, and it must be remembered that the condition being treated is serious. Should this procedure not succeed and should the symptoms continue, no harm has been done. The roll of packing should be removed and the sinus dealt with as the condition indicates. If a mural thrombus was present, this may have broken down. If so, it should be incised and cleaned out. The author has submitted this proposition to a prominent general surgeon, and he pronounced the procedure surgically sound. The head of the anatomic department of the University of Nebraska College of Medicine also indorsed it, as did the head of the pathology department. The author has treated one case in this way with very satisfactory results.

MOST GOVERNMENTS ARE INEFFICIENT OR CORRUPT—SOME ARE BOTH

One of the very first questions that naturally arises is: Have any of our governmental agencies so conducted themselves in the past as to make it reasonably safe for us to entrust so stupendous a function as universal social insurance to any branch or department? I maintain that most of our local as well as state governments are inefficient or corrupt, and some are both.

Let any one who doubts the correctness of this statement spend a little time to look around with a critical eye and observe how most local governments, the various departments of the state in which he lives, and the departments of the federal government are conducted, and I am convinced that he will find more inefficiency than he has ever dreamed could exist. If he does not personally know of corruption and inefficiency in government, let him but scan one single daily newspaper regularly for a month in order to be convinced. And what else can one expect who is at all familiar with politics as it has been played and managed in these United States in the year 1931—the manner in which most men secure their nominations and later their elections, and to whom they are beholden when they take office?

We have all seen the statement repeatedly in the public press, but have never seen it succssfully refuted, that in many of the political subdivisions of our country only sixty per cent of the taxes collected are effectively spent, the remained being frittered away, wasted or stolen. This inefficiency and corruption is due to many causes of which some of the more important are:

The fact that so far no formula has been discovered according to which the most efficient, honest, industrious and worthy members of the community can be secured for public office. Nor has there been any method devised whereby spoils politics, favoritism, pull, nepotism, waste and graft can be eliminated with even a reasonable degree of certainty. The individual who could solve these two problems would not only be the greatest benefactor of the human race but the wisest man the world has so far produced. Plato tried to solve this problem twenty-three centuries ago when he wrote his "Republic." For a time he actually thought he had found a solution. He prevailed upon the King of Syracuse to adopt his plan and put it into operation. The king tried it for a while, tired of it and sold Plato into slavery. Some good friends ransomed him. After that he was not so sure that his scheme would work in practice. Things are not much different today than they were in the time of Plato. Only worse. Worse because of the increase in population resulting in larger governmental units, the enormous increase in the number of those exercising the franchise, the increase in the percentage number of ignorant voters and the ever increasing astuteness and finesse of our practical politicians.

Inefficiency and corruption is so common that we have become callous to it. We are annoyed by it, we grumble and complain mildly about it, we pay our ever mounting taxes if we have anything with which to pay and "let it go at that." It almost seems as though we humans had adopted David Harum's dog philosophy and were applying it to ourselves. He said:

"A certain amount of fleas is good for a dog, it keeps him from brooding on being a dog."

The best illustration of governmental muddling in general is to be found in the mess most governments of the world have made of themselves during the past twenty years. As examples, we need but call attention to the virtual bankruptcy of Germany and of Austria, the maladministration in Russia, the revolutions in Spain, China, Central and South America, the dictatorships in Poland and Italy and when we come nearer home, the general lawlessness in the United States with its murders and kidnapping for ransom; conditions in the city of New York as disclosed by the Seabury Investigation; the virtual bankruptcy of Chicago and Philadelphia, and the near bankruptcy of many other governmental units.

Let us study conditions in our own country a little more in detail in order to determine whether it would be wise or even safe to entrust the federal, state and local government or any one of them, with supervision over the private lives of its citizens. (This phase of the problem will be taken up more in detail in the future installments).

—Edward H. Ochsner,
Chicago.

THE COMING MEETING OF THE MEDICAL SOCIETY OF THE MISSOURI VALLEY

The Medical Society of the Missouri Valley will hold its annual meeting this year in Omaha, March 29th, 30th, 31st. Headquarters will be in the Hotel Fontenelle.

Those attending last year's meeting, held in Des Moines, proclaimed it as one of the most interesting of the many held by the society since 1873. The program was well balanced and the entire proceedings well handled by the local committee.

The purpose of the society is to bring to the physicians of the middle west a program such as would be attainable only by traveling some distance and with the outlay of much time and money. In other words, the Medical Society of the Missouri Valley brings to your backyard what you would travel far to get.

Societies with such purposes are becoming more popular and are enthusiastically supported by the physicians in whose territory they serve. Naturally, it is only through large attendance that such organizations can prosper and hope to build the better meetings of tomorrow.

The Medical Society of the Missouri Valley has made steady progress since its reorganization in 1928. Last year it was changed from the membership type of organization with yearly dues to one calling only for a registration fee of $5.00 for those attending the meetings.

This year's program is practically complete. Physicians representing different sections of the practice of medicine and country have accepted invitations to be with us. The next issue of this *Journal* will contain the program.

Among those already accepted invitations to address the society are Drs. J. C. Bloodgood, Baltimore; F. Lahey, Boston; Loyal Davis, Chicago; Alvarez and Helmholtz, Rochester, Minn.; A. Kuntz, St. Louis, and Burt Shurly, Detroit.

Remember the above dates. Make this, if no other, the convention to be attended. It will be worth your while.

STATEMENT OF JUST WHAT WAS DONE WITH EACH MEMBER'S $8.00 DURING 1931

Share of Dues to Journal Fund	$1.50
Shares of Dues to Defense Fund	2.00
Dr. R. B. Adams (Salary)	.5076
Office and Administrative expense:	
Rent	.1523
Telephone	.0742
Printing	.0520
Bank Charge	.0059
Stamps	.0782
Secretary of State Fee	.0008
Dr. F. A. Long (1930 expense)	.0398
Insurance Premium	.0042
A. M. A. (Cards and Directories)	.0266
Multigraph Letter Shop	.0018
Typewriter for meeting	.0021
Miss Runge (expense at meeting in May)	.0059
Typewriter	.0507
Brief Case	.0040
Miscellaneous Expense:	
Councilor Expense	.2633
Huse Publishing Company (For Programs)	.0450
Program Committee	.0105
Speakers at Meeting	.1653
Perry, Van Pelt & Marti (Campaign Committee)	.2539
Dr. Lucien Stark (President Expense)	.0635
State Fair Committee	.2514
Public Activities Committee	1.0158
Dr. E. R. Hays (Salary)	.8460
Public Policy and Legislation	.0307
Circulars Insurance Committee	.1116
Student Loan Fund	.4230
Convention Expense:	
R. W. Fouts	.0817
B. F. Bailey	.0856
J. Stanley Welch	.0527
Miss Alice Cary Gilchrist	.1117
	$8.3178

We spent $422.04 more than our income this year which was taken care of by money on hand in the bank; that is why the total expense is $0.3178 more than the $8.00 for dues. We have investments on hand as follows: Journal Fund $7,913.22 and cash on hand $554.50; Defense Fund, $4,174.03 and cash on hand $2,124.73; General Fund, $12,630.70 and cash on hand $1,077.26. This amount which is the total of our investments was accumulated during prosperous years and before some of our activities got under way. These investments are not being added to in any way. They were accumulated to tide us over a period of disaster.

—R. B. Adams, Sec.

DERMATOLOGIC HINT NO. II

Infiltrated, erythematous patches in the flexors of elbows and knees, on the nuchal region and lateral surfaces of the neck are usually "neurodermatitis" and very frequently allergic in origin.

—Donald J. Wilson,
Omaha.

OBSTETRICAL AND GYNECOLOGICAL HINTS. NO. II

In cases of suspected placenta praevia, never do a vaginal examination unless the strictest asepsis is maintained and THEN ONLY if you are prepared to meet every contingency. In other words, in a well equipped hospital with a complete set up of the delivery room. A fatal hemorrhage may follow the slightest manipulation.

—Harold S. Morgan,
Lincoln.

EDITORIAL PARAGRAPHS

An eastern surgeon recently operated on himself for a hernia. This writer is not sure that such a performance is even smart.

The Omaha Women's Club staged a Better Babies Exposition late in January. Some 1700 babies were entered, showing the interest of the general public.

Sanitary control of aerial navigation has assumed a major importance, since it was discovered that infected mosquitos are sometimes transported from infected areas.

Quinidine is much used nowadays in certain heart affections and seems to have a proper place. We have not seen mention of the undoubted laxative effect of quinidine, which patients realize with even small doses.

Gurley, a village 60 miles north of Sidney, desires a physician to locate. It is in a good territory and the people offer complete cooperation. Have had a physician for past twelve years, who lately located elsewhere.

The complex blending or races has brought about the Hawaiian racial problem. Race distinctions are blurred although class distinctions exist. Interracial marriages are common and not interdicted by law. The blend of Chinese and Hawaiian is said to produce a stock which stands first in industry and self support.

The coming meeting of the Medical Society of the Missouri Valley at Omaha, March 29, 30 and 31, will be well worth while as all the meetings of this organization are. A veritable postgraduate course is offered for each session and the programs are put on by teachers of the medical colleges of the surrounding territory. All who can possibly do so, should attend.

Chiropractors of Pennsylvania, in the United States District Court, prayed for an injunction against the State Board of Medical Education and Licensure and the Licensure Act of 1911, asking that the Act be declared in derogation of the rights of plaintiff under the Fourteenth Amendment. The court thought otherwise and the prayed for injunction was denied.

Isaacs and Sturgis of the University of Michigan have produced a liver extract suitable for intravenous injection—about thirty times as powerful as previous extracts produced. The stimulating effects on the red blood cells is marvellous. Four to six injections suffice to restore the blood of anemia sufferers to normal and subsequent injections of from four to six week intervals will maintain health. So says *Science* for January.

And now, Dr. A. D. Bevan, noted Chicago surgeon and former President of the American Medical Association, is to be haled before the Chicago Medical Society for testifying before a committee of Congress that he believed 90% of liquor prescriptions given by physicians were for the illicit use of the liquor. The doctor may have erred in using so high a percentage; but who will say that he was not relatively right in his assertion?

Dr. Henry S. Wellcome, president of Burroughs, Wellcome & Co., London, with branches in this country, has been knighted by King George as a recognition of his generous support of medical research. The particular interest in this item is that Doctor Wellcome is a native of Wisconsin and a graduate of the Philadelphia College of Pharmacy and a life member of the American Pharmaceutical Association, although now a British subject.

"A more general recognition of the importance diphtheria carriers bear to the prevalence of diphtheria will aid in securing community cooperation, which is essential to the success of disease control. The diphtheria carrier, it is well to recall, is a person who, though not ill, harbors the diphtheria bacillus in the nose or throat. Such person may be immune to the disease but is an active means of distributing the micro-organisms to susceptible persons. There is no serum or antitoxin that will affect the carrier condition as such."—State Board Bulletin.

The next written examination of the American Board of Obstetrics and Gynecology will be held in nineteen different cities of the United States and Canada at 2 p. m. on Saturday, March 26, 1932. The general, oral and clinical examination will be held in New Orleans on Tuesday, May 10, 1932, immediately preceding the meeting of the American Medical Association. Reduced railroad fares will be available. For detailed information and application blanks apply to the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

Recently press clippings indicated that two physicians in this state, widely separated in distance, confided to the local newspapers the advent of the 1200th and 1800th baby under their professional guidance, in a limited number of years. They should have "bided a wee" until the number had reached 2500 and the number of years worth talking about. In giving out statements of this kind one should be careful not to name a number greater than the total number of babies born in the community in a given time, to save possible embarrassment!

The editor has three histories of medicine at his command, but when he wanted to look up the date of the first appendectomy he had to hunt it in Howard Kelley's "The Vermiform Appendix". The first operation deliberately undertaken for removal of the appendix was done by T. G. Morton of Philadelphia in 1887, but it was not until 1889 when McBurney published his classical observations that the operation of appendectomy became a well established procedure. Disease of the appendix, formerly known as typhlitis and perityphlitis, was named by Reginald Fitz in 1886, as appendicitis.

The American College of Physicians recently selected Dr. O. T. Avery of the Hospital of the Rockefeller Institute of New York City as the recipient of the John Phillips Memorial Prize for 1932, for a series of studies on the Pneumococcus. This prize, an annual award by the College in the sum of $1,500.00, is given to perpetuate in the College the memory of Dr. John Phillips of Cleveland, a man of outstanding accomplishments as investigator, teacher and physician, for many years a member of the Board of Regents of the American College of Physicians, who gave his life in saving others on the occasion of the Cleveland Clinic disaster on May 15, 1929.

The Sheppard-Towner Maternity and Infancy Act, which Congress expressly repealed in 1929 will be revived if U. S. Senate Bill No. 572 and H. R. Bill No. 4739; commonly known as the Jones-Bankhead bill, are adopted by the Congress now in session. During the seven years the Maternity and Infancy Act was in effect, the decline in infant mortality rate in the United States was not accelerated thereby, neither did it cause any decline in the maternal mortality rate. There has been no unfavorable reaction in either rate following the repeal of the Act. The enactment at the present of such legislation would: (1) Add to the burden of every Federal and State Taxpayer; (2) enlarge and confirm authority in medical matters of a federal lay bureau to the disparagement of our state government; (3) afford insidious approach to state medicine of a truly paternalistic type; that is state medicine in states, counties and municipalities under federal direction and control.

An increasing tendency to seek medical advice and treatment for mental disorders, behavior and personality problems, and other forms of human maladjustment, when the earliest symptoms appear, is reported by The National Committee for Mental Hygiene, which has recently finished a nation-wide inventory of existing facilities for the study and management of these conditions outside of institutions. This tendency is reflected in a marked growth in the number of mental hygiene and child guidance clinics established in various communities in the United States during the past ten years and signifies, according to the National Committee, a recognition of the importance of mental health in the daily lives of increasing numbers of the population. In 1920 such clinics, the Committee states, were comparatively rare. Today, the study shows, there are some 674 clinics which provide a regular mental health service to the public in 34 states, most of these having come into existence since 1922, when The National Committee for Mental Hygiene and The Commonwealth Fund first joined forces in the development of organized child guidance work.

We hear complaints from doctors' wives that their husbands do not bring the *State Medical Journal home*. Physicians should take notice of the fact that we carry a column on Auxiliary Notes and that the ladies are interested in these notes and the physicians should be interested. *Colorado Medicine* says: "We are depending upon the support of the wives of the physicians throughout the country to augment our efforts in educating the public in preventive medicine, the health examination, and the proper direction of health legislation. They are capable of inspiring confidence where we may fail; they may convey messages to lay organizations which our ethics and humility, unfortunately preclude. It is for our profession that they have organized and are working. Their value to our cause is unlimited; it will be largely in proportion to the aid and encouragement they receive at the hands of their physician husbands. It is known that a number of physicians are unsympathetic with the Auxiliary and its work. May they allow themselves to recognize the potentialities of this organization and endeavor better to inform themselves of its capabilities."

NECROLOGY

Solon R. Towne, Omaha. Nebr.; native of Stowe, Vermont; Dartmouth Medical School, 1875; practitioner at Brookfield, Vt., and Enfield, Mass., before locating in Omaha in 1888; assistant in Omaha city health department from 1891 to 1897; inspector for state board of health. 1898 to 1905; organizer of registration of births and deaths, 1905; lecturer on public health, Creighton Medical College, 1894 to 1900, and University College of Medicine from 1900 to 1915; organizer and for some years president, Nebraska Anti-Tuberculosis Association; founder, Nebraska Audubon society; an ornithologist of note in the Middle West; member Nebraska State Medical Association; a man who loved his fellow man; died, January 27, 1932, aged eighty-five years. Three daughters survive.

Oscar C. Hopper, Stanton, Nebr.; native of Dresden, Ontario; University of Western Ontario Medical School, London, Ont., 1898; practitioner at Scribner from date of graduation until 1911 when he located at Stanton, where he continued in practice for twenty years; member, Nebraska State Medical Association; died January 23, 1932, aged about sixty-two years. A widow and two sons survive.

Truman E. Fairall, Tecumseh, Nebr.; University of Maryland School of Medicine, 1873; practitioner at Tecumseh since 1879; died January 30, 1932, as a result of a broken hip sustained a few days before, aged eighty-five years. A widow, son and daughter survive.

John J. Metzinger, Fremont, Nebr.; native of Iowa City; State University of Iowa, College of Homeopathic Medicine, 1899; eye, ear, nose and throat surgeon at Fremont for a quarter of a century; member, Nebraska State Medical Association; died following a cerebral hemorrhage, February 4, 1932, aged fifty-five years. A widow, daughter and two sons survive.

Warren H. Slabaugh, Pomona, Calif., Bellevue Hospital Medical College, 1883; practitioner at South Omaha for a quarter of a century antedating his removal to California where he practiced for a time at Williamston, later at Los Angeles, until ill health compelled retirement, when he moved to Pomona; a former member of the Nebraska State Medical Association; died of a chronic heart affection February 7, 1932, aged about seventy-seven years.

John Stuart Livingston, Plattsmouth, Nebr.; University of Nebraska College of Medicine, 1898; son of the late Dr. R. R. Livingston, one of the founders of the original Nebraska Medical Society; thirty-five years a practitioner at Plattsmouth; died February 9, 1932, aged about sixty-one years.

Mathew H. Blackburn, Princeton, Ill.; University of Iowa College of Medicine, 1889; at one time a practitioner at Filley, Nebr., died early in February at Princeton, aged about seventy years.

AUXILIARY NOTES

Dear Auxiliary Members:

As we cross the threshold of a new year shall we, like other businesses, pause and take stock of ourselves to see where we have arrived in relation to the goal which we set for ourselves at our annual meetings?

Is there yet a county or a state Auxiliary that is not working under the direction of an advisory council or counselor of doctors appointed by its medical society? A questionnaire sent last summer to our thirty-seven constituent state units to ascetain if they had advisory councils appointed by their medical associations brought replies from thirty and revealed that twenty-eight of those did have advisory council. One of our goals for this year is an advisory council or counselor for each of our county and state Auxiliaries. Where does your own Auxiliary stand with relation to this goal? It is hoped that each state president reporting at New Orleans will be able to say that not only her state Auxiliary but that each of its constituent county units has an advisory council or counselor.

Have you as a county or state group set a goal for membership? Has your Auxiliary some sort of membership file by which you have kept a complete record of members from the beginning of your organization and are you retaining as members all those who have ever belonged? If not, could you not begin this first month in the new year to re-enlist them? Our national files contain many cards of members which we have had to class as "delinquents" because we have failed to receive dues for them or reports on them. Some of these have moved to other states, others have passed into the Great Beyond, still others have just failed to pay dues. Could not each organized county that has not already done so, yet this year make an effort to re-enlist every eligible woman who has ever been a member, make a card file of its membership and report to the state office the names of those who have moved to another locality and to a chairman, which each state president is being asked to appoint for that purpose, the names of those who have passed on.

It seems to me that each county administration should feel that it had failed somehow in its duty if it did not make a sincere persistent and tactful effort to hold in membership at least all those committed into its care by the former administration and unless its membership is already one hundred per cent of the wives of doctors belonging to the county medical society, it should attempt to make a definite, even though slight, gain.

The state Auxiliaries have made much progress this year in securing chairmen corresponding to the national chairmen. Our organizations cannot function properly until county Auxiliaries also have such chairmen who will receive program suggestions and materials from the state chairmen and who will report to the state chairmen on the progress of the county work. The function of the National Auxiliary is to stimulate interest in types of approved work possible to be done and to serve as a clearing house for information on the kinds of work being done successfully by the various Auxiliaries. It is obvious that little interest can be stimulated if there are not county and state chairmen corresponding to the national. How near to this goal is your Auxiliary?

Where do you stand with relation to your Hygeia goal? We have repeatedly said that Auxiliaries are organized to carry on those projects advised or approved by the medical associations. The House of Delegates of the American Medical Association in the Convention at Philadelphia last spring asked that we "recognize as one of our chief activities the promotion and distribution of this publication through parent-teacher associations, boards of education and similar bodies interested in education."

We believe that the national mid-year board meetings and conventions are so important in the life of the Auxiliary that every board member should consider it an obligation—when reasonably feasible—to attend. We are suggesting that each state Auxiliary set this new goal for itself at its next annual meeting if possible, that it provide sufficient means to insure its state president's attendance at the mid-year board meeting in Chicago, and at the annual Convention in the spring. We believe that every state chairman should make an honest effort to attend the national convention.

Mrs. Joseph Hume of New Orleans is the chairman of the next convention which is to be held next May 9-13 in that interesting old city of the South, New Orleans. Our own President-Elect, Mrs. Walter Jackson Freeman, who so skillfully guided the Convention in Philadelphia is also a member of the New Orlean's Convention Committee.

There we shall find both pleasure and inspiration. May I hope to meet you there, one and all! May we have the satisfaction of reporting that we have reached all goals set for the current year! There are yet three more working months in which to accomplish them.

And won't you all be considering the goals we should set for next year?

Faithfully yours,
(Mrs. Arthur B.) Anna F. McGlothlan.

* * * * * *

In regard to paragraph 3 of this letter: the National Auxiliary is trying to file a "Memorial"—a complete, up-to-date list of the wives of all members of the A. M. A.. Will the members at large in Nebraska please help by sending to Mrs. Fred Teal, 1941 Pershing Road, Lincoln, information that might be classified under any of the following:

1. Those who have died.
2. Active members.
3. Possible members.

* * * * * *

The regular meeting of the Richardson County Auxiliary was held January 19th, at the home of Mrs. G. C. Gillispie. Dinner at the Hotel Weaver preceded the meeting. Mrs. H. R. Miner resigned as president because of the stress of duties as State Treasurer and Chairman of the National Public Activity Committee. The chair will be occupied by Mrs. Egermeyer until the April election.

* * * * * *

Sponsored by the Lancaster County Society, a dinner was held at the University Club on Feb. 11th, in honor of Dr. Martin Fischer of the Cincinnati College of Medicine. About 81 doctors and their wives were privileged to hear Dr. Fischer, who has two pictures in the Nebraska Art Association exhibit and who is also a writer. His theme was philosophical rather than scientific or artistic.

—Mrs. Roy Whitham.

THE SOCIETIES

The January meeting of the **Madison Five Counties Medical Society**—it will be six counties hereafter, Cuming county having affiliated—was held at Hotel Norfolk, Norfolk, January 19, with forty present. Following the usual dinner the following program was carried out:

"Recent Advances in the Classification and Interpretation of the Nephritides," from the standpoint of the Internist, Dr. J. D. McCarthy, Omaha.

From the standpoint of the ophthalmologist, with demonstration of fundus photographs, Dr. Wm. H. Stokes, Omaha.

The new president, Dr. P. B. Lonergan, in his enthusiasm issued an appeal to the membership, part of which is here appended:

"These programs are gotten up for your benefit, and are not excelled by any society in this or any other state, for at least one speaker each month is a specialist in his chosen field of medicine and surgery, another is usually a local man who has some interesting case reports or some other good material to offer you.

"A meeting, such as has been given each month during the past years, is an excellent postgraduate course and would cost us many times what we pay for it, if we were to leave our practice for twelve days each year, but it is doubtful whether we could get the variety of good material in any given postgraduate school in a corresponding length of time.

"If your reason for not attending more regularly is due to old man depression, then let me ask you, if you would advise one of your patients to sit home day after day and think of nothing else but himself and brood over his troubles?

"Pack up your troubles in your gasoline buggy and head her straight for the meeting each month, where there will be plenty of good food for mind and body, and after you have listened to the good program and had a good visit with the other members of the society, you are certain to return home a happier and wiser man."

The **Madison Six County Medical Society** met at Hotel Norfolk, February 9, with about fifty present. The following program was carried out:

"Allergic Diseases, Diagnosis and Treatment," illustrated with motion pictures in color, Dr. Ray M. Balyeat, Director Balyeat Hay Fever and Asthma Clinic, Oklahoma City.

"Presentation of Crippled Children Clinic Plan", illustrated with motion pictures of other Clinics in Nebraska, Mr. A. H. Mann, Field Representative; Mr. J. R. Jewell, Supervisor.

Dr. Balyeat's talk was too wonderful and instructive to be put in a few sentences. To appreciate his work one must hear him and see his films.

Arrangements were made for a crippled children's clinic in the early spring.

The **Saunders County Medical Society** held its annual meeting January 20, and elected Dr. M. E. Lathrop, of Wahoo, president; Dr. Frank Tornholm, Wahoo, secretary-treasurer, reelected.

The **Cass County Medical Society** met at Weeping Water at the Rest Haven Hotel, February 2nd. After a dinner, Dr. Herbert H. Davis, of Omaha, talked on "Pathology, Diagnosis and Treatment of Tumors of the Breast. Dr. L. O. Hoffman, of Omaha, talked on "Present Day Obstetrics." Seventeen were present at the meeting.

The February meeting of the **Otoe County Medical Society** was held at Nebraska City, February 8, Dr. D. D. Stonecypher in the chair.

Dr. Kenneth Johnson of Nebraska City gave the first of a series of talks on points in dentistry of vital importance to the physician. He emphasized the importance of early care to the deciduous teeth for the purpose of safe-guarding the proper development and position of the permanent teeth. Plaster moulds were used to illustrate many remarks made by the speaker.

Dr. Harley Anderson of Omaha presented a paper on the "Toxemias of Pregnancy." He spoke in detail on the modern management of these cases according to the degree of severity. He also gave a few remarks on some recent advances in the treatment of puerperal sepsis.

Dr. Kenneth Johnson supplement Dr. Anderson's paper with some remarks on the care of the teeth during pregnancy.

—H. B. Morton, Sec.

The **Franklin County Medical Society** held its annual meeting at the home of Dr. R. B. Campbell, Franklin, January 20. Following an interesting program, Dr. Amy Chapman was elected president and Dr. Hal. C. Smith delegate.

HUMAN INTEREST TALES

Dr. C. E. Leasure has located at Humboldt.

Dr. E. C. McAleer, formerly of Tecumseh, has located at Peru.

Dr. A. E. Knode, Omaha, is recovering after a serious operation.

Dr. Frank Barns, Albion, was reported ill in an Omaha hospital, recently.

Dr. J. R. Kalar, Anselmo, who has been ill for some time, has resumed practice.

Dr. Joseph Baird, formerly of Ansley, has located at his home town, Arcadia.

Dr. O. A. Kostal, Giltner, has been chairman of the village board for five years.

Dr. Herman C. Bodemer, Globe, Ariz., visited his mother and friends at Cozad, recently.

Dr. L. B. Farmer, Alliance, was seriously injured by a fall on icy steps at his residence.

The marriage of Dr. William A. Campbell and Miss Marjorie Bell Maun at Lincoln, is announced.

Dr. H. C. Pedersen, Fremont surgeon, is about to go to Vienna for an extended period of study.

Dr. Walter Judd, medical missionary to China, spoke at First Plymouth church, Lincoln, recently.

Dr. J. W. Neville, formerly of Utica, has located at York in succession to the late Dr. E. B. Hanna.

Dr. Alfred E. Reeves, Farnam, has filed as a candidate for lieutenant governor on the Republican ticket.

Dr. W. N. Hylton, Gresham pioneer physician, is reported ill. He suffered a paralytic stroke in January.

Dr. J. T. Myers, Omaha, spoke on Bacteria before the Inter-professional institute, Omaha, February first.

The Methodist hospital, Omaha, recently announced the registration of the 100,000th patient. "Quite some."

Dr. E. V. Wiedman, Lincoln, is in Berlin, "absorbing" special work in surgery, gynecology and obstetrics.

Dr. J. S. Devries, Fremont, has been reappointed county physician of Dodge county, without competative bidding.

Dr. Robert L. Rodwell, for some time in practice at Cambridge, has located at Edison in succession to Dr. C. W. Gooden.

Dr. Max Cutler and Dr. William Thallheimer, Chicago, spoke before the Omaha-Douglas County Medical society recently.

The sympathy of the profession go out to Dr. Herman Jahr, Omaha, in the death of his father in New York City, recently.

Dr. John A. Buis, Pender, was elected second vice president of the Sioux Valley Medical Society meeting at Sioux City, recently.

Dr. H. W. Orr, Lincoln Orthopedic surgeon, has for some time been confined to a hospital in a body cast as a result of a fall on an icy pavement.

An article on "Doctors Say Men are as Old as Their Arteries", by Dr. John P. Lord, Omaha, appeared in the Illinois Central Magazine for January.

Dr. Kathleen Sullivan, Omaha, president of a branch of the National Medical Women's Association, tendered a dinner to twenty-five medical women at her home, February 6.

Dr. E. R. Hays, Falls City, has been appointed the public health member of the planning committee selected to carry out in Nebraska the recommendations of the White House Conference on Child Health.

The death of Mrs. H. L. Hildreth, widow of the late Dr. M. L. Hildreth, who died at Lyons, December 4th last, is announced. She died at the home of a daughter at Holdrege, the last days of January and was buried at Lyons on January 30.

ROSTER OF OFFICERS—1932

Lucien Stark, Norfolk, President	1932
Arthur E. Cook, Randolph, President-elect	1932
A. L. Miller, Kimball, Vice President	1933
A. J. Cameron, Herman, Vice President	1933
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1933
H. J. Lehnhoff, Lincoln, Chairman	1933
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Homer Davis, Genoa	1934
D. D. King, York	1934
H. E. Potter, Fairbury	1931
W. J. Douglas, Atkinson	1931
R. D. Bryson, Callaway	1932
L. W. Rork, Hastings	1932
C. A. Selby, North Platte	1932
A. L. Cooper, Scottsbluff	1932

DELEGATES TO THE A. M. A.

B. F. Bailey, Lincoln	1933
R. W. Fouts, Omaha	1932

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

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J. S. Welch	Lincoln
C. C. Tomlinson	Omaha
H. W. von Schulte	Omaha

John Edward Summers, M. D., LL. D., F. A. C. S.

By the Editor

This number is dedicated to Dr. John E. Summers, esteemed teacher, colleague and friend of the medical profession, who without question has done more for the advancement of modern surgery in Nebraska and the Middle West than any other person.

Dr. John E. Summers, Omaha, is a native son of Nebraska, born at Old Fort Kearney, the son of General John E. Summers, then surgeon of that military garrison. As a youth he was privately tutored, in adolescence attended West Point Military Academy three years, then resigned to study medicine and was graduated from the College of Physicians and Surgeons, now the Medical Department of Columbia University, New York City, in 1881. Following graduation he entered the Army as acting assistant surgeon and was on duty at frontier posts in Wyoming nearly two years. Resigning from the army he spent two years in European study, mostly in Vienna.

Returning to this country in 1885 he located in Omaha and almost immediately became widely known as a surgeon and was appointed surgeon-in-chief of Clarkson hospital, a position he has held through all the years and is now senior surgeon. He was chief surgeon of the Douglas County hospital from its construction about forty years ago until within the last year. He has been on the staffs of Immanuel and Wise Memorial hospitals and chief of staff of each.

He has been professor of clinical surgery of the Nebraska University College of Medicine and of its predecessor, the Omaha Medical College, ever since he located in Omaha.

Doctor Summers has been a liberal contributor to surgical literature—not the least to *The Nebraska State Medical Journal*—during all the years as the Syllabus in this number shows.

In 1889, he published "The Modern Treatment of Wounds," an octavo volume of 150 pages. He contributed to "Binnie's Treatise on Regional Surgery". His friends endeavored for years, without success, to induce him to publish a work on Clinical Surgery.

He was president of the Nebraska State Medical Society, 1895-96; sometime president of the Western Surgical Association, as well as of the Missouri Valley Medical Society; vice president of the American Surgical Association in 1916. He has always been active in other local and regional medical societies. He believes in medical societies and has often remarked he never attended one without learning something. He is a member of the *Societe Internationale de Chirurgie.* He has a working knowledge of French and German and reads the literature fluently.

He is a charter member of the American College of Surgeons and is at present one of the Govern ~~Trustees.~~ Several years ago the University of Nebraska conferred upon him the honorary LL. D. degree.

It passes current as common knowledge among his friends that Dr. Summers has unusually keen surgical judgment—an almost uncanny sense of surgical values. This is a result of systematic clinical observation.

Dr. Summers in his professional career has exemplified the dictum of George Washington, which seems an appropriate conclusion to this article: "Labour to keep alive in your breast that little spark of Celestial fire called Conscience."

DR. JOHN E. SUMMERS NUMBER

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CONTENTS

	Page
Foreword	133
Dr. John E. Summers: An Appreciation, W. J. Mayo, M. D.	134
John Edward Summers, M. D., LL. D., F. A. C. S., By the Editor	Insert
Syllabus of Papers, J. E. Summers, M. D.	135
List of Journals Showing the Number of Papers Published in Each, and the Year	144
Index	144
Wayside Gleanings of a Pioneer Surgeon, John E. Summers, M. D.	146
Some Annotations on the Summers' Syllabus, F. A. Long, M. D.	151
Clinical Aspects of the Cancer Problem, George W. Crile, M. D.	153
Concerning the Nature of Epigastric Hernia and Its Relation to Gastric and Other Disturbances, Leonard Freeman, M. D.	159
Indications for Intestinal Drainage—Enterostomy and Colostomy—Technique of Operation, Donald Macrae. Jr., M. D.	161
Surgical Dynamics of Alimentation, C. A. Roeder, M. D.	165

EDITORIAL—

	Page
More Reasons Why Your Membership Should Remain Intact	170
The Postgraduate Course of the College of Surgeons	170
Annual Congress on Medical Education, Licensure and Hospitals	171
Progress at the Douglas County Hospital	172
An Invitation to Attend Iowa State Medical Society Meeting	173
American Medical Association Meeting at New Orleans	173
Editorial Paragraphs	173
Necrology	174
Auxiliary Notes	174
The Societies	175
Human Interest Tales	175

FOREWORD

The Syllabus of Dr. Summers' papers, his comments upon some of his work and his opinions upon the practice of surgery of the recent past and of the present was prepared by him to be published independently. We have, however, with his permission, taken the opportunity of publishing the Syllabus and his comments, together with the papers of his friends, as an invaluable contribution to the history of surgery in Nebraska and the Middle West.

All the papers herein were specially prepared for publication in this number and with the knowledge that they were to be a part of a dedication number.

A word of explanation may be in order in regard to the article of the late Dr. Donald Macrae. He had taken a great interest in this special number, had promised a paper for the number and his paper herein had been read at the meeting of the Western Surgical Association meeting at Denver, shortly before his fatal illness.

In honoring Dr. Summers with this number, we, as a profession, honor ourselves.

DR. JOHN E. SUMMERS: AN APPRECIATION

W. J. MAYO, M. D.,
Rochester, Minn.

In this age of industry, material success leads to the great financial rewards. But, although we do not belittle the comforts and, one might say, the opportunity at least for culture, that result from material prosperity, the great things of life are the imponderables, those qualities which cannot be weighed and measured, and can be estimated only in the spiritual sense.

When one attempts to estimate the progress of medicine in the Missouri Valley in the last forty years, one realizes that the leadership which has given character to the splendid professional advance has come through a relatively small number of men. One of these great leaders of the generation which is just passing is Dr. John E. Summers.

It is a source of gratification to us all that this man who, as a practitioner of surgery, a teacher in a medical school, and a leader not only in surgery but in all those attributes which go to make up a worthwhile professional life, is to receive on this occasion the felicitations of the profession he has loved and served so well, and of the people of a great country who have benefited by his service.

Throughout my long acquaintance with Dr. Summers, as I have seen him at meetings of the American Medical Association, the American Surgical Association, the American College of Surgeons, and other gatherings, I have been impressed with the character of his scientific contributions to these conferences. He has been in the forefront of sound advances in surgery, yet without fads; with mature opinions based both on experience and on the study of professional literature, not only of the English speaking countries, but as expressed in other countries.

And it is stimulating to all of us, especially to those who are getting into the shady years, to note his steady grasp of important medical discoveries and his interest in scientific meetings, as expressed by his continuing contributions.

We are inspired by seeing this surgeon, who might be classed as one of the last of a great group, retaining his professional interest, and with the quiet confidence of years, by precept and example teaching the younger men the obligations of a professional life.

It is not my small part in this festschrift to consider in more detail the effect of Dr. Summers' influence on the progress of surgery, but rather to indicate that the spirit which carries on to the end and passes the torch to those who are to follow has its rewards based not on the material but on the spiritual side of life.

SYLLABUS OF PAPERS

J. E. Summers, M. D.
Omaha, Nebr.

1886

Tuberculosis of the Larynx.
Transactions of the Nebraska State Medical Society, 1886-87, p. 222.

Antiseptics in Surgery.
Transactions of the Nebraska State Medical Society, 1886-87, p. 363.

Peritonitis Following Herniotomy Treated by Irrigation and Drainage of the Abdominal Cavity.
Medical Record, New York, 1886.

1887

Abscess of Bone.

Ovariotomy—Recovery.

Perityphlitis—Operation and Recovery.
New York Medical Journal, 1887.

Two Cases of Resection of the Inferior Maxilla.
Medical Register of Philadelphia, 1887.

1888

Removal of a Partially Encysted Stone in the Bladder by Lateral Lithotomy.
Nebraska State Medical Society, Lincoln, Nebraska.
Omaha Clinic, 1888-89, v. 1-2, p. 72.

Sand-Burr Removed from the Larynx, Aided by the Laryngoscope.
Omaha Clinic, 1888-89, v. 1-2, p. 21.

1889

Treatment of Wry-Neck by Open Incision—With Presentation of a Case.
Medical Society of the Missouri Valley, March 21.
Omaha Clinic, 1888-89, v. 1-2, p. 49.

Observation on Some Modern Surgical Procedures—Illustrated.
Nebraska State Medical Society, Kearney, Nebraska, May 21.
Omaha Clinic, 1888-89, v. 1-2, p. 33.

Notes on Surgical Cases.
Tuberculosis of the Ankle-Joint—Amputation.
Tuberculosis of the Knee-Joint—Amputation.
Sarcoma of Lower End of Femur Commencing in the Periosteum—Amputation.
Tuberculous Tumor of the Bladder.
Stone in the Female Bladder—Litholopaxy.
Stone in the Bladder—Lateral Lithotomy.
Medical Society of the Missouri Valley, September 20.
Omaha Clinic for December, 1889.

Amputation of the Tongue.
Medical Society of the Missouri Valley, December 20.
Omaha Clinic, 1888-89, v. 1-2, p. 279.

Exploration for Suspected Stone in the Pelvis of a Movable Kidney—Fixation of Kidney in Incision—(Hahn's Operation).
First Nephropexy in Nebraska.
Omaha Clinic, 1888-89, v. 1-2, p. 71.

The Treatment of Chronic Naso-Pharyngeal Catarrh.
Nebraska State Medical Society, Lincoln, Nebraska, June 26, 27, 28.
Omaha Clinic, 1888-89, v. 1-2, p. 109.

1890

Neuromatous Tumor of the Median Nerve. Osteo-Myelitis of the Tibia. Resection in Hip-Joint Disease, Two Cases. Talipes Equinus.
Abstract of a Clinical Lecture at the Bishop Clarkson Hospital, Omaha, Nebraska, February 7.
Omaha Clinic, 1888-89, v. 1-2, p. 304.

Removal of Tubes and Ovaries for Epilepsy—Was the Operation Justifiable?
Medical Society of the Missouri Valley, September 18.
Omaha Clinic, 1890-91, v. 3, p. 234.

1891

Omaha's "Remarkable Case" of High Temperature, An Undoubted Hysterical Fake.
Omaha Clinic, September, 1891, v. 4, No. 6.

The Treatment of Appendicitis—With Illustrative Cases.

Missouri Valley Medical Society, Lincoln, Nebraska.
Omaha Clinic, 1891-92, v. 4, p. 195.

REMOVAL OF THE VERMIFORM APPENDIX FROM A CHILD TWENTY-TWO MONTHS OLD, FOR SUPPURATIVE APPENDICITIS: RECOVERY.
The Medical News, 1891, v. 59, p. 513.

LAPAROTOMY FOR FIBROID DEGENERATION OF THE OVARIES—EXTIRPATION OF THE PAROTID GLAND—COMPOUND COMPLICATED FRACTURE OF THE FEMUR.
Omaha Clinic, 1890-91, v. 3, p. 20.

RECENT EXPERIENCES IN ABDOMINAL SURGERY—SIXTEEN CONSECUTIVE CASES.
Omaha Clinic, 1890-91, v. 3, p. 245.

CLINICAL LECTURES DELIVERED AT THE CLARKSON MEMORIAL AND IMMANUEL HOSPITALS—ILLUSTRATED.
Omaha Clinic, 1891-92, v. 4, p. 315.

1892

No Papers.

1893

NEPHRECTOMY IN TUBERCULOSIS OF THE KIDNEY.
Nebraska State Medical Society, May, 1893.
Omaha Clinic, 1893.

THE INDICATIONS FOR AMPUTATION IN CHRONIC DISEASE OF THE LARGER BONES AND JOINTS WITH A REPORT OF SEVENTEEN RECENT CASES, INCLUDING THREE SUCCESSFUL AMPUTATIONS AT THE HIP-JOINT.
Omaha Clinic, July, 1893.

APPENDICITIS IS PURELY A SURGICAL DISEASE.
Missouri Valley Medical Society, September, 1893.
Omaha Clinic, 1893.

REPORT OF A CASE OF FIBROID TUMOR COMPLICATING PREGNANCY—CESAREAN SECTION.
Read at Meeting Western Surgical Society, Des Moines, Iowa, 1893.

1894

TWO CASES OF INTESTINAL SURGERY IN WHICH THE "MURPHY BUTTON" WAS USED.
Missouri Valley Medical Society, September, 1894.
Omaha Clinic, 1894.

DOUBLE CLUB-FOOT AND HAND. (INVOLVING BOTH HANDS AND FEET). ILLUSTRATED.
Surgical Clinic, Clarkson Memorial Hospital, October 13.
Omaha Clinic, October, 1894.

CLINICAL LECTURES.
Amputation at the Shoulder Joint.
Combined Perineal Section and Supra-Pubic Cystotomy for Stricture of the Urethra With Extravasation of the Urine.
Tracheotomy for Foreign Body in Trachea.
Haemorrhage Following Castration.
Haemorrhagic Hydrocele—Two Cases.
Omaha Clinic, December and October, 1894.

AN INTERESTING CONDITION OF THE INTESTINES FOUND DURING OPERATION FOR THE CURE OF FECAL FISTULA.
Western Association of Obstetricians and Gynecologists, Omaha, Nebr., December 27.
The Medical Herald, 1895.

1895

THE SURGICAL TREATMENT OF VARICOSE VEINS OF THE LEGS.
Nebraska State Medical Society, May 22.
Omaha Clinic, 1895, v. 8, p. 297.

TYPES OF OPERATION INDICATED IN CANCER OF THE UTERUS.
Western Surgical and Gynecological Association, Kansas City, December 27.
The Medical Herald, 1896.

1896

THE TREATMENT OF INCISED AND PUNCTURED WOUNDS OF THE ABDOMEN.
Transactions Iowa State Medical Society, 1896, v. 14, p. 155.

PRESIDENT'S ADDRESS.
Nebraska State Medical Society, Lincoln, Nebraska, May 19.
Nebraska State Medical Society, Transactions of 1896, p. 10.

SURGERY OF THE BILE DUCTS.
Wandering Choledochus Stone; Operation—Recovery.
Choledochotomy for the Removal of a Large, Slightly Movable Gallstone—Recovery.
Pain Under Right Ribs, Slight Jaundice, Chronic Invalidism—Exploration of Gallbladder and Ducts—Negative Finding—Cure.
Read by Invitation before the Iowa State Medical Association.
American Journal of Surgery and Gynecology, St. Louis, Missouri.

CONTRIBUTION TO THE SURGERY OF THE CAROTID ARTERIES—ILLUSTRATED.
Simultaneous Ligation of the Left External and Internal Carotid Arteries; Death on the Third Day From Acute Cerebral Softening.
Simultaneous Ligation of Both External

Carotid Arteries, With Subsequent Ligation of the Left Common Carotid Artery and the Terminal Branches of the Ophtalmic Arteries for Plexiform Angioma of the Scalp; Cure.
Annals of Surgery, 1897, v. 25, p. 617.

Haemophilia: An Unrecognized Case Which Terminated Fatally After Excision of the Knee-Joint.
Medical Record, 1896, v. 49, p. 336.

Gastrorrhaphy for Gastroptosis and Enteroptosis.
Western Surgical and Gynecological Association, Topeka, Kansas, December 28.
The Kansas City Medical Index, 1897. v. 18, p. 161.

1897

Epilepsy Probably Cured and Paralysis Improved by Relieving Irritation and Compression Resulting From an Old Compound Depressed Fracture of the Skull, Replacing the Large Area of Depressed Fragments by Heavy Gold Foil.
Omaha Medical Society, March 23, 1897.
The Medical Record, 1897.

An Object Lesson in the Diagnosis of Appendicitis.
Omaha Medical Society, May, 1897.
New York Medical Monthly, June, 1897.

A Clinical Contribution to the Surgery of the Urinary Bladder, and Peritoneum.
Western Surgical and Gynecological Association, Denver, Colorado, December 28.
Western Medical Review, 1898, v. 3, p. 1.

The Clinical Aspect of Tubal Pregnancy, Based Upon a Personal Experience in Eight Cases.
Western Medical Review, 1897.

Surgical Notes.
Resection of a Gangrenous Portion of the Small Intestines and End to End Approximation With the Murphy Button—Cure.
Internal Esopthagotomy After the Method of Abbe.
External Esophagotomy Upon An Infant. Removal of An Impacted Penney. Recovery.
Western Medical Review, 1897,

Cerebral Abscess Due to Infective Otitis Media—Operation and Recovery. Illustrated.
Western Medical Review, 1897.

A Successful Gastro-Enterostomy With the Murphy Button, for Pyloric Obstructon Due to a Tumor.
Western Medical Review, 1897.

1898

No Papers.

1899

Nephro-Ureterectomy for Traumatic Haemato-Hydro-Nephro-Ureterosis. Recovery.
The Medical Record, July. 1899.

Empyema of the Gallbladder.
Missouri Valley Medical Society, St. Joseph, Missouri, March 18.
Western Medical Review, Lincoln, Nebraska, June, 1899.

Rubber Gloves or Gauntlets, Their Use by Physicians and Surgeons
Nebraska State Medical Society, May 8, 1899.

What Should Be the Position of the Surgeon Relative to the Treatment of Appendicitis?
Missouri Valley Medical Society, Council Bluffs, Iowa, September 21.
Western Medical Review, Lincoln, Nebraska, January, 1900.

Stricture of the Esophagus as a Complication and Sequel of Typhoid Fever. Report of a Case Cured by Abbe's Operation.
The Philadelphia Medical Journal, October 28, 1899.

Treatment of Compound Fractures of the Skull.
Modern Treatment of Wounds. p. 67.

A Contribution to the Surgery of the Common Bile Duct. Report of a Case of Choledochoenterostomy.
Western Surgical and Gynecological Association, Des Moines, Iowa, December 27, 1889.
The Journal of the American Medical Association, March, 1900.

Treatment of Wounds.
Effect of Bacteria on Wound Healing. Antiseptic and Aseptic Surgery.
Western Medical Review, 1897, v. 2, p. 347.
Disinfection of the Hands and Forearms of the Surgeon, Sterilization of Ligatures and Suturing Materials.
Western Medical Review, 1897, v. 2, p. 374.
Operative and Accidental Wounds.
Western Medical Review, 1898, v. 3, p. 24.
Wounds Made Into Infected Tissues.
Western Medical Review, 1898, v. 3, p. 63.
Wounds Not Inflicted by the Surgeon.
Western Medical Review. 1898, v. 3, p. 99.
Punctured Wounds of the Brain. Penetrating Wounds of the Chest.
Western Medical Review, 1898, v. 3, p. 135.
Treatment of Incised and Punctured Wounds of the Abdomen.

Western Medical Review, 1898, v. 3, p. 179.

Wounds of Joints.

Western Medical Review, 1898, v. 3, p. 226; 266.

Poisoned Wounds.

Western Medical Review, 1898, v. 3, p. 305.

Head Injuries.

Western Medical Review, 1898, v. 3, p. 341.

Specific Wound Infections. Erysipelas. Phlegmonous Erysipelas.

Western Medical Review, 1898, v. 3, p. 379.

Tetanus.

Western Medical Review, 1898, v. 3, p. 414.

Compound Fractures.

Western Medical Review, 1898, v. 3, p. 449.

Treatment of Septic Blood Poisoning.

Western Medical Review, 1899, v. 4, p. 96.

1900

INDICATIONS FOR THE DRAINAGE IN DISEASES OF THE BILIARY PASSAGES AND THE TECHNIC (ORIGINAL) OF OPERATION. (ILLUSTRATED).

The Philadelphia Medical Journal, 1900.

ENDOTHELIOMA (ADENOMA) OF THE BASE OF THE TONGUE SIMULATING A STRUMA OF THE TONGUE. ILLUSTRATED.

Later classified as a goitre.

Western Surgical and Gynecological Association, Minneapolis, Minnesota, December 27.

Western Medical Review, 1901.

1901

DOUBLE URETER, REPORT OF A NEPHRECTOMY DONE UPON A YOUNG CHILD WITH THIS CONDITION PRESENT.

The Medical Herald, St. Joseph, Missouri, January, 1901.

CLEAN SURGERY VERSUS MUTILATING AND UNSCIENTIFIC OBSTETRIC PROCEDURES AS PRACTICED UPON THE VIABLE UNBORN INFANT.

Missouri Valley Medical Society, March 21.

The Medical Herald, St. Joseph, Missouri, May, 1901.

PERSONAL EXPERIENCES WITH CONTUSED, GUNSHOT AND STAB WOUNDS OF THE ABDOMEN. FORTY-NINE CASES.

Various types, thirty-four recovered, fifteen died.

Western Surgical and Gynecological Transactions, 1901, p. 302.

1902

THE VERIFORM APPENDIX AS A CAUSE OF INTESTINAL OBSTRUCTION.

Missouri Valley Medical Society, Lincoln, Nebraska, March 20.

American Medicine, 1902, v. 3, p. 868.

INTRA-ABDOMINAL LESIONS FOLLOWING TRAUMATISMS.

Sioux Valley Medical Society.

Iowa Medical Journal, March, 1902.

REPORT OF TWO CASES OF ACUTE INTESTINAL OBSTRUCTION FOLLOWING CONTUSION OF THE ABDOMINAL WALLS.

Western Surgical and Gynecological Association, St. Joseph, Missouri, December 29.

American Medical Journal, 1903.

1903

THE SURGICAL ASPECT OF PROSTATIC HYPERTROPHY.

Western Medical Review, Lincoln, Nebraska, March, 1903.

THROMBOSIS OF ARTERIES FOLLOWING SECONDARY SHOCK—REPORT OF A CASE.

Gangrene of the forearm and lower arm. Amputation—Recovery.

Nebraska State Medical Association, Lincoln, Nebraska, April 28.

Western Medical Review, Lincoln, Nebraska, September, 1903.

VARIX OF THE INFERIOR MESENTERIC VEIN COMPLICATED BY CHRONIC ULCERATIVE COLITIS—OPERATION.

American Medical Association.

Journal of the American Medical Association, July 18, 1903.

THE TREATMENT OF PAPILLOMA OF THE LARYNX IN CHILDREN. BY TRACHEOTOMY.

New York Medical Journal, October 22, 1903.

THE TREATMENT OF POSTERIOR PERFORATIONS OF THE FIXED PORTIONS OF THE DUODENUM.

Western Surgical and Gynecological Association, December 28.

Annals of Surgery, 1904, v. 139, p. 727.

1904

THE TREATMENT OF SOME FORMS OF INTESTINAL OBSTRUCTION BY THE AID OF AN ARTIFICIAL VALVULAR FISTULA AND INTESTINAL EXCLUSION. ILLUSTRATED.

St. Joseph Surgical Society, St. Joseph, Missouri, May.

The Medical Herald, St. Joseph, Missouri, June, 1904.

WHEN NOT TO OPERATE IN APPENDICITIS.

Missouri Valley Medical Society, Council Bluffs, Iowa, October 26, 1904.

Medical Herald, St. Joseph, Missouri, January, 1905.

THE TREATMENT OF ABDOMINAL INJURIES WITH SPECIAL REFERENCE TO GUNSHOT WOUNDS OF THE LIVER.

International Congress of Military Surgeons, St. Louis, Missouri, October 10 to 15.

Journal of the Association of Military Surgeons of the United States.

THE SURGICAL TREATMENT OF STOMACH TROUBLE AND BILIOUSNESS.

Read by Invitation before Seventh District Medical Society, Des Moines, Iowa, October 27.

Iowa Medical Journal, February, 1905.

1905

THE SURGICAL TREATMENT OF CHRONIC MUCOMEMBRANOUS AND ULCERATIVE COLITIS, WITH SPECIAL REFERENCE TO TECHNIQUE.

Illustration—"The Operations of Surgery", Jacobson & Rowlands, v. 2, p. 482.

Chicago, Surgical Society, March 6.

Annals of Surgery, July, 1905.

REPORT OF A CASE OF GLUTEAL CAVERNOUS ANGIOMA. ILLUSTRATED.

Western Surgical and Gynecological Association, Kansas City, Missouri, December 28.

Surgery, Gynecology and Obstetrics, 1906, v. 2, p. 306.

1906

HOW TO SUTURE THE WOUND IN EARLY OR INTERVAL OPERATIONS FOR APPENDICITIS, SO AS TO SHORTEN THE INDOOR CONFINEMENT TO ONE WEEK.

Sioux Valley Medical Association, Sioux City, Iowa, January 19.

Journal of the American Medical Association, May, 1906.

THE CAUSE AND POSSIBLE PREVENTION OF GASTRIC AND INTESTINAL HAEMORRHAGES FOLLOWING OPERATIONS FOR APPENDICITIS, HERNIA, AND ALL OTHER OPERATIVE PROCEDURES INVOLVING THE BLOOD SUPPLY OF THE OMENTUM AND VISCERA.

The Medical Herald, St. Joseph, Missouri, November, 1906.

1907

THE CONSERVATIVE SURGICAL TREATMENT OF THE PROSTATE GLAND IN THE VERY FEEBLE AND AGED.

Iowa State Medical Society, Cedar Rapids, Iowa, May 15.

Annals of Surgery, December, 1907.

1908

SUPPURATIVE INFLAMMATIONS OF THE KNEE-JOINT—REPORT OF AN ILLUSTRATIVE CASE.

C. H. Mayo technique. Wide open incision; forced flexion, antiseptic gauze packing; retention seven days; reposition; excellent recovery.

Surgery, Gynecology and Obstetrics, April, 1908, p. 405.

SPLENECTOMY IN BANTI'S DISEASE, FOLLOWED BY OEDEMA OF THE LARGE INTESTINE WITH LOCALIZED NECROSIS OF ITS WALLS—RECOVERY.

American Surgical Association, May 6.
Annals of Surgery, June, 1908.

INVAGINATION OF LIMITED ANNULAR GANGRENE OF THE SMALL BOWEL VERSUS RESECTION.

American Medical Association, Chicago, Illinois, June.

The Journal of the American Medical Association, 1908, v. 51, p. 472.

THE CANCER QUESTION, WITH SPECIAL REFERENCE TO THE TREATMENT OF CANCER OF THE BREAST.

Western Surgical and Gynecological Association, Minneapolis, Minnesota, December 29.
New York Medical Journal, February, 1909.

THE RECOGNITION OF ACUTE INTESTINAL OBSTRUCTION AND THE IMPORTANCE OF IMMEDIATE OPERATION.

See comments of W. J. Mayo in "Regional Surgery" (Binnie), v. 2, p. 191.
Wyoming State Medical Society, 1908.
The Medical Herald, St. Joseph, Missouri, March, 1909.

1909

THE EARLY DIAGNOSIS OF GALLSTONES AND THE IMPORTANCE OF NOT POSTPONING SURGICAL INTERFERENCE UNTIL SERIOUS PATHOLOGICAL CHANGES HAVE TAKEN PLACE.

Nebraska State Medical Association, Omaha, Nebraska, May 4-7.
American Medicine, 1909, v. 4, p. 451.

SARCOMA OF THE TONSIL. REPORT OF A CASE, WITH REMARKS ON THE TECHNIQUE OF THE OPERATION.

American Medical Association, Atlanta City, June.
Journal of the American Medical Association, 1909, v. 53, p. 1398.

CANCER A CONSTITIONAL DISEASE; ITS RATIONAL TREATMENT.

Missouri Valley Medical Society, Council Bluffs, Iowa, September 9.
The Medical Herald, St. Joseph, Missouri, November, 1909.

1910

Should the Operation for Ruptured Tubal Gestation Be Immediate or Deferred?

Missouri Valley Medical Society, Omaha, Nebraska, March 17.
New York Medical Journal, May, 1910.

Simultaneous Rupture of the Quadriceps Extensor Tendon of One Knee, and of Tendo Patellae of the Other Knee—Report of an Operative Case, With Illustrations of the Technique Employed.

Perfect anatomical and functional recovery.
Missouri Valley Medical Society. Council Bluffs, Iowa, September 1.
The Medical Herald. St. Joseph, Missouri, January, 1911.

Typhoidal Cholecystitis.

Western Surgical Association, Chicago, Illinois, December 19-20.
Surgery, Gynecology and Obstetrics, 1911, v. 12, p. 200.

1911

The Possible Diagnosis and a Technic in Excision of the Chronic Indurated Ulcer of the Posterior Wall of the Stomach. Illustrated.

Berkely Moynihan (Lord Moynihan), "Abdominal Surgery", v. 1, p. 269, describes technique and comments upon Author's work in abdominal surgery.
Nebraska State Medical Association, May 3.
Journal of the American Medical Association, 1911, v. 56, p. 1699.

Some Modifications of the Technic in the Surgery of the Gallbladder and Bile Ducts.

Advocacy chiefly of drainage procedures in serious infectious conditions—even gangrene.
Americal Surgical Association, June 21.
Annals of Surgery, July, 1911.

Peritonization in Pelvic Surgery, With Special Reference to the Use of the Sigmoid Flexure of the Colon—Illustrated.

Surgery, Gynecology and Obstetrics, 1911, p. 125.

1912

Large Hydatid Cyst of Dome of Liver, Operated Upon Successfully by Transpleural Route—Illustrated by Lantern Slides.

Medical Society of Missouri Valley, March 21, Colfax Springs, Iowa.

Boning of the Thoracic Precordial Wall in Certain Affections of the Heart—Report of a Case.

Western Surgical Association, December 21.
American Journal of Surgery, June, 1913.

1913

Observations on a Case of Mediastino-Pericarditis Treated by Cardiolysis (Brauer).

Operation procedure renamed as a Decompression.
Written in collaboration with Arthur D. Dunn, M. D.
American Journal of the Medical Sciences, 1913, v. 145, p. 74.

Surgical Aspects of Intestinal Stasis, From an Anatomic Point of View.

American Medical Association, Minneapolis, Minnesota, June.
Journal of American Medical Association, 1913, v. 61, p. 639.

The Surgery of Jackson's (Jonnesco's) Membrane, Naturally a Normal Ligament, Mechanically Considered.

New York Medical Journal, 1913, v. 98, p. 891.

1914

The Preparation of Advanced Cases of Prostatism for Surgical Treatment—Illustrative Cases.

Western Medical Review, Omaha, Nebraska.

The Differential Diagnosis Between the Acute Pathological Perforations Within the Abdomen, With Special Reference to Duodenal Perforations; Indicated Technic of Operation.

Western Surgical Association, Denver, Colorado, December.
New York Medical Journal, March, 1915.

Suggestions Regarding the Anatomy of, and the Surgical Technic in, the Treatment of Jonnesco's Membrane.

Annals of Surgery, 1914, v. 60, p. 113.

1915

Observations on the Question of Heredity in Goitre, With Corroborative Findings.

Western Medical Review, February, 1915, p. 127.

The Incidence of Heredity as a Factor in the Causation of Goitre.

American Surgical Association, June 9.
Annals of Surgery, 1915, v. 62, p. 138.

1916

Surgical Notes.

Ischaemic Paralysis of the Hand.
Traumatic Rupture of the Popliteal Artery.
Gall-Stones and Septic Cholangitis.
Western Medical Review, April, 1916, p. 194.

THE OPERATIVE TREATMENT OF CANCER BY THE ACTUAL CAUTERY.

Nebraska State Medical Association, Omaha, Nebraska, May.

Nebraska State Medical Journal, 1916, v. 1, p. 86.

1917

MILITARY SURGERY, EFFECTS OF MODERN PROJECTILES, TREATMENT OF INFECTED WOUNDS, GAS POISONING, TRENCH FOOT, THE USE OF THE X-RAY IN LOCATING FOREIGN BODIES.

Nebraska State Medical Association, Lincoln, Nebraska, May.

Nebraska State Medical Journal, 1918. v. 3, p. 1.

A SIMPLE METHOD OF RESECTING THE TRANSVERSE COLON, WITH PRESERVATION OF THE OMENTUM: LIKEWISE FOR THE SUSPENSION OF A PROLAPSED COLON. ILLUSTRATED.

American Surgical Association, May 31.

Annals of Surgery, September, 1917.

CARDIOLYSIS. A FURTHER REPORT, WITH NOTES UPON AN ADDITIONAL CASE.

Surgery, Gynecology and Obstetrics, July, 1917, p. 92.

TOTAL ABDOMINAL HYSTERECTOMY FOR IRREDUCIBLE COMPLETE INVERSION OF THE UTERUS DUE TO A SESSILE BASED SUBMUCOUS FIBROID; RECOVERY. ILLUSTRATED.

Missouri Valley Medical Society, Lincoln, Nebraska, September 21.

Medical Herald, St. Joseph, Missouri, December, 1917, v. 36, p. 265.

1918

THE DIFFERENTIAL DIAGNOSIS BETWEEN THE BENIGN AND MALIGNANT TUMORS OF THE FEMALE BREAST.

Nebraska State Medical Association, Omaha, Nebraska. May.

Nebraska State Medical Journal, 1918, v. 3, p. 297.

CLINICAL SURGERY.

Lipoma of the Caecum Causing Intussusception. Reduction, Excision, Recovery.

Wandering Spleen, Excision.

Ruptured Ovarian Cyst.

Nebraska State Medical Journal, June, 1918, v. 3, p. 180.

1919

THE EVOLUTION OF THE SUPRA PUBIC OPERATION OF PROSTATECTOMY AND ITS LATEST STATUS. ILLUSTRATED.

Nebraska State Medical Association Conference, May 19-21.

Nebraska State Medical Journal, 1919, v. 4, 202.

THE TYPES OF OPERATION SUITABLE FOR RESECTION OF MALIGNANT GROWTHS OF THE LOWER SIGMOID. ILLUSTRATED.

Nebraska State Medical Journal, 1919, v. 4, p. 354.

IMPROVEMENTS IN WAR SURGERY OF THE NERVOUS SYSTEM AS APPLIED TO CIVIL PRACTICE.

Nebraska State Medical Journal, 1919, v. 4, p. 9.

1920

ACUTE INTESTINAL OBSTRUCTION. THE CAUSE OF THE CONTINUED HIGH MORTALITY; HOW THIS MAY BE REDUCED BY JEJUNOSTOMY.

American Surgical Association, May 3.

Annals of Surgery, August, 1920.

POST-OPERATIVE GASTRIC AND INTESTINAL HAEMORRHAGE—A FURTHER CONTRIBUTION.

Missouri Valley Medical Society, Omaha, Nebraska, September 7.

Nebraska State Medical Journal, 1920, v. 5, p. 342.

ENTEROSTOMY IN THE TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.

Clinical Congress of the American College of Surgeons, Montreal, Canada, October.

Surgery, Gynecology and Obstetrics, 1921. p. 412.

1921

SCIATIC HERNIA. REPORT OF A CASE COMPLICATED WITH MYXOMATOUS TUMOR OF THE SCROTUM. ILLUSTRATED.

Western Surgical Association, December 9.

Annals of Surgery, June, 1922.

1922

THE MANAGEMENT OF ACUTE RETENTION OF URINE WITH SPECIAL REFERENCE TO THE ENLARGED PROSTATE.

Nebraska State Medical Association, Omaha, Nebraska, April 26.

Nebraska State Medical Journal, October, 1922, v. 7, p. 21.

1923

TRANSPOSITION OF VISCERA (SITUS VISCERUM TRANSVERSUS). REPORT OF A CASE WITHOUT TRANSPOSITION OF THE USUAL ABDOMINAL REFLEX. ILLUSTRATED.

Nebraska State Medical Journal. April, 1923, v. 8, p. 117.

Transverse Incision in the Surgery of the Kidney. Illustrated.

Nebraska State Medical Association. Lincoln, Nebraska. May 15.

Nebraska State Medical Journal. August, 1923, v. 8. p. 273.

Recurrences in Cancers of the Breast.

American Medical Association. San Francisco. California. June.

Journal of the American Medical Association, September, 1923, v. 81, p. 873.

1924

The Differential Diagnosis Between Abdominal Cysts—Intraperitoneal and Retro-Peritoneal.

Western Surgical Association. French Lick Springs. Indiana. December 5.

Nebraska State Medical Journal, 1925. v. 10. p. 37.

Notes on Clinical Surgery.

Two-hundred and twenty-seven clinical cases operated upon during author's service. University Hospital. Fall and Spring Semester, 1922-23.

Diseases of the Appendix, Thirty Cases—One Death.

Amputations. Seven—One Death.

Fractures. Eight Cases.

Hemorrhoids. Nine Cases.

Hydrocele. Three Cases.

Intestinal Obstruction, Four Cases.

Conditions Subsequent to Childbirth Requiring Operation.

Extra-Uterine Gestation, Three Cases.

Tumors of the Uterus and Ovaries, Eleven Cases.

Malignant Disease of the Bowel.

Splenectomy. One Case—Abscess of the Spleen, One Case.

Tumor of the Middle Portion of the Duodenum.

Diseases of the Thyroid.

Rodent Ulcer of the Face.

Breast Tumors.

Fistula. in Ano. Four Cases.

Umbilical Herniae.

Gallbladder Disease, Six Cases.

Ulcer of Duodenum.

Peritonities.

Salpingitis.

Carcinoma of the Lip.

Carcinoma of the Parotid Gland.

Nebraska State Medical Journal. Issues of March, April and June, 1924.

1925

How the Mortality May Be Reduced in Operations on the Gallbladder and Gall Ducts.

Nebraska State Medical Association. Lincoln, Nebraska, May 12-14.

Nebraska State Medical Journal. 1925. v. 10, p. 373.

Tetraidophenolphtalein as an Aid in the Diagnosis of Gallbladder Diseases.

Western Surgical Association. Wichita. Kansas, December 18.

Transactions of the Western Surgical Association.

Removal of the Sympathetic in the Neck for Angina Pectoris and Epilepsy. Jonnesco's Operation. Cases Reported.

Douglas County Medical Association.

1926

The Practical Management of Some of the Types of Acute Intestinal Obstruction.

Sioux Valley Medical Association, Sioux City, Iowa, January 20.

Nebraska State Medical Journal, March, 1926, v. 11, p. 89.

Cancer of the Stomach in Nebraska.

Nebreska State Medical Journal, September, 1926, v. 11, p. 335.

Surgical Pitfalls.

Omaha Douglas County Medical Society, October 12.

Nebraska State Medical Journal, 1927, v. 12, p. 98.

1927

The Treatment of Annular Gangrene of the Small Bowel by Invagination Versus Resection. Illustrated.

Surgery, Gynecology and Obstetrics, 1927, p. 374.

Paper on the Pancreas.

Dubuque County Medical Society. Dubuque, Iowa, June 22.

The New Surgery of New Growths.

The Radio Knife.

Nebraska State Medical Journal, December, 1927, v. 12, p. 442.

1928

The Dilated Duodenum.

Nebraska State Medical Journal, v. 13, p. 46.

HOW TO REDUCE THE DEATH RATE FROM CANCER.

Editorial, Omaha Bee-News, May 20.

ACUTE PERFORATIONS OF THE ABDOMINAL VISCERA.

Nebraska State Medical Journal, 1928, v. 13, p. 250.

DUODENO-JEJUNOSTOMY. REPORT OF A CASE.

Annals of Surgery, September, 1928.

1929

INDICATIONS FOR AND TECHNIQUE OF DUODENO-JEJUNOSTOMY. ILLUSTRATED.

Nebraska State Medical Association, Omaha, Nebraska, May 14.

Nebraska State Medical Journal, 1929, v. 14, p. 310.

PRACTICAL SURGERY.

Emergency Surgery.
Tetanus.
Gas Gangrene.
Economics of the Practice of Surgery.
Some of the Acute and Sub-Acute Emergencies in the Surgery of the Urethra and Bladder.
The Treatment of Intra-Abdominal Lesions Following Contusions of the Abdominal Walls.
The Increased Mortality in Important Surgical Diseases, Especially in Abdominal Surgery.
Prognosis in Cancer With Special Reference to Cancer of the Breast.
Blood Vessel Surgery.
Traumatic Aneurism—Suture of Wound in Femoral Artery.
Popliteal Aneurism—Restoration of the Continuity of the Artery. Matas Operation.
Various Issues of The Nebraska State Medical Journal. 1928 and 1929.

ACUTE COMPLETE OBSTRUCTION OF THE DUODENUM FOLLOWING A GASTROJEJUNOSTOMY. CURE BY DEGASTRO-ENTEROSTOMY.

Archives of Surgery, October, 1929, v. 19, p. 293.

HOSPITALIZATION.

Editorial, Nebraska State Medical Journal, October, 1929.

1930

DECOMPRESSION OF THE HEART.

Annals of Surgery, April, 1930.

GENERAL SURGERY UNDER SPINAL ANESTHESIA—PERSONAL EXPERIENCES. ILLUSTRATED.

Nebraska State Medical Journal, May, 1930, v. 14, p. 186.

AN EMERGENCY SUBSTITUTE FOR BLOOD TRANSFUSION. (NORMET'S SOLUTION.)

Nineteen successfully operated on cases.
Nebraska State Medical Journal. 1930, v. 15, p. 457.

1931

CHYLOUS CYSTS OF THE MESENTERY—REPORT OF A CASE.

Nebraska State Medical Journal, 1931, October.

SURGICAL THERAPEUTICS.

Editorial, Nebraska State Medical Journal, 1931, v. 16, No. 8.

FIBROMA OF THE MESENTERY IN CHILDREN—REPORT OF A CASE.

Second in literature.
Accepted for publication in Surgery, Gynecology and Obstetrics.

IS CANCER OF THE BREAST FOUND MORE OFTEN IN MARRIED WOMEN THAN IN UNMARRIED WOMEN?

Correspondence in Surgery, Gynecology, and Obstetrics, October, 1931, v. 53, p. 566.

CANCER.

Editorial, Nebraska State Medical Journal, October, 1931.

THE INCREASING HIGH DEATH RATE FOR APPENDICITIS—AMERICA THE HIGHEST IN THE WORLD—HOW TO LOWER THIS DEATH RATE BY A MORE RATIONAL OPERATIVE TECHNIQUE.

Ninth Councillor District Medical Society, Lexington, Nebraska, November 5.

THE COMPARATIVE RELATIONSHIP OF POSTOPERATIVE GASTRIC AND INTESTINAL HEMORRHAGES TO POSTOPERATIVE PULMONARY EMBOLISM.

Western Surgical Association, Denver, Colorado, December 4, 5.

The Western Journal of Surgery, Obstetrics and Gynecology, Portland, Oregon. February, 1932, v. 40, p. 83.

1932

DONALD MACRAE, JR., AN APPRECIATION.

Journal of the Iowa State Medical Society, 1932, v. 22, p. 102-104.

LIST OF JOURNALS SHOWING THE NUMBER OF PAPERS PUBLISHED IN EACH, AND THE YEAR

American Journal of the Medical Sciences, 1913	1
American Journal of Surgery, 1913	1
American Journal of Surgery and Gynecology, 1896	1
American Medicine, 1902, 1909	2
Annals of Surgery, 1897, 1904, 1905, 1907, 1908, 1911, 1914, 1915, 1917, 1920, 1922, 1928, 1930	13
Archives of Surgery, 1929	1
Iowa Medical Journal, 1902, 1905, 1932	3
Journal of the American Medical Association, 1900, 1903, 1906, 1908, 1909, 1911, 1913, 1923	8
Journal of the Association of Military Surgeons of the United States, 1904	1
Kansas City Medical Index, 1897	1
Medical Herald, 1895, 1896, 1901, 1904, 1906, 1909, 1911, 1917	11
Medical Record, 1886, 1896, 1897, 1899	4
Medical Register of Philadelphia, 1887	1
Nebraska State Medical Journal, 1916, 1918, 1919, 1920, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931	29
New York Medical Journal, 1887, 1903, 1909, 1910, 1913, 1915	6
New York Medical Monthly, 1897	1
Omaha Bee, 1928	1
Omaha Clinic, 1888, 1889, 1890, 1891, 1893, 1894, 1895	22
Surgery, Gynecology and Obstetrics, 1906, 1908, 1911, 1917, 1921, 1927, 1931	9
The Medical News, 1891	1
The Philadelphia Medical Journal, 1899, 1900	2
Transactions of Iowa State Medical Society, 1896	1
Transactions of the Nebraska State Medical Society, 1886, 1896, 1899	4
Transactions of the Western Surgical Association, 1925	1
Western Medical Review, 1897, 1899, 1901, 1903, 1914, 1915, 1916	14
Western Journal of Surgery, Obstetrics and Gynecology, 1931 (Accepted)	1
Western Surgical and Gynecological Association, 1901	1
Papers read but not published:	
Western Surgical Society, Des Moines, Iowa, 1893	1
Missouri Valley Medical Society, Colfax Springs, Iowa, 1912	1
Douglas County Medical Association, 1925	1
Dubuque County Medical Society, Dubuque, Iowa, 1927	1
Ninth Councilor District Medical Society, Lexington, Nebraska, 1931	1
Total	146
Military Surgeon, Book Reviews, 1917 to 1921	60
Modern Treatment of Wounds, published book, 1899	1
Total	207

INDEX

Abdomen	1891, 1896, 1899, 1901, 1902, 1904, 1914, 1928, 1929
Abscess	1887, 1897
Address	1896
Amputations	1889, 1893, 1894, 1924
Anesthesia	1886, 1930
Angioma	1905
Appendicitis	1891, 1893, 1897, 1899, 1902, 1904, 1906, 1924, 1931
Artery	1896, 1903, 1916, 1929
Bile Ducts	1896, 1899, 1900, 1911, 1925
Bladder	1888, 1889, 1897, 1899, 1911, 1924, 1925, 1929
Blood	1899, 1929, 1930
Bone	1887, 1893
Bowel	1908, 1919, 1924, 1927
Brain	1899
Breast	1908, 1918, 1923, 1924, 1929, 1931
Cæcum	1918
Cancer	1895, 1908, 1909, 1916, 1923, 1924, 1926, 1927, 1928, 1929, 1931
Cardiolysis	1913, 1917
Catarrh	1889
Chest	1899
Cholecystitis	1910
Colitis	1903, 1905
Colon	1911, 1917
Cyst	1912, 1918, 1924, 1931
Disinfection	1899
Duodenum	1903, 1914, 1924, 1928, 1929
Embolism, Pulmonary and Post-operative	1931
Epilepsy	1890, 1897, 1925
Erysipelas	1899
Esophagotomy	1897
Esophagus	1899
Face	1924
Femur	1889
Fracture	1891, 1899, 1924
Gallstones	1896, 1909, 1916
Gangrene	1908, 1927, 1929
Gastrorrhaphy	1896
Glands	1891, 1907, 1924
Gloves	1899
Goitre	1915
Haemophilia	1896
Hemorrhage	1894, 1906, 1920, 1913
Hand	1916
Head	1899
Hernia	1906, 1921, 1924
Hemorrhoids	1924
Hospitalization	1929
Hydrocele	1894, 1924
Intestine	1894, 1897, 1902, 1904, 1908, 1913, 1920, 1926
Joint	1889, 1890, 1893, 1894, 1899, 1908
Jonnesco's Membrane	1913, 1914, 1925
Kidney	1889, 1893, 1923
Larynx	1888, 1903
Lecture	1891, 1894
Lip	1924
Macrae, Donald, Jr.	1932
Maxilla	1887
Mesentery	1931
"Murphy Button"	1894, 1897
Nephrectomy	1893, 1901
Nephro-Ureterectomy	1899
Nerve	1890
Obstetrics	1893, 1897, 1901, 1910, 1924
Ovaries	1890, 1891, 1918, 1924
Pancreas	1927
Paralysis	1897, 1916
Peritonitis	1886, 1911, 1924
Perityphlitis	1887
Prostate	1911, 1914, 1922
Radio-Knife	1927
Sarcoma	1889, 1909

Sigmoid	1919
Skull	1897, 1899
Spleen	1918, 1924
Sterilization	1899
Stomach	1904, 1911, 1926
Surgery	1886, 1889, 1891, 1903, 1911, 1914, 1917, 1919, 1926, 1929, 1930, 1931
Talipes Equinus	1890, 1894
Temperature	1891
Tendon	1910
Tetanus	1899, 1929
Tibia	1890
Tongue	1889, 1900
Tonsil	1909
Trachea	1894
Trauma	1902
Tuberculosis	1886, 1889
Tumor	1897, 1918, 1921, 1924
Thyroid	1924
Ureter	1901
Urethra	1894, 1929
Urine	1922
Uterus	1895, 1924
Veins	1895, 1903
Viscera	1906, 1923, 1928
Wounds	1899, 1917
Wry-Neck	1889

"Operations are now so safe that there is a general belief that it does not much matter who performs them. Nothing could be further from the truth. Operators are like golfers. Many can play at golf, after prolonged instruction and practice, but few can ever play golf. Unless the golf is in, it can never come out. There are many operators, but few surgeons. In addition to natural gifts, a surgeon requires prolonged hospital experience to enable him to get out of any tight corner with the greatest advantage to his patient and to his own satisfaction."—Rutherford Morison.

"Read not to contradict and confute; nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider . . . Reading maketh a full man; conference a ready man; and writing an exact man. And, therefore, if a man write little, he had need have a great memory; if he confer little, he had need have a present wit; and if he read little, he had need have much cunning, to seem to know that he doth not."—Francis Bacon.

"There are surgeons who operate upon the 'canine' principle of savage attack, and the biting and tearing of tissues are terrible to witness. These are they who operate with one eye upon the clock, and who judge the beauty of any procedure by the fewness of the minutes it has taken to complete. There are other surgeons who believe in the 'light hand', who use the utmost gentleness, and who deal lovingly with every tissue they touch. The scalpel is, indeed, an instrument of most precious use—in some hands a royal sceptre; in others but a rude mattock. The perfect surgeon must have the 'heart of a lion and the hand of a lady'; never the claws of a lion and the heart of a sheep."—Lord Moynihan.

"I am sitting writing among my medical books. Every doctor's office should be rich in books. One must have at hand books of literature, books for study, books for diverting reading, and books for immediate reference. Unless things are looked up at once, they are seldom looked up at all. When in the mood for a certain sort of book the mind is receptive to what that sort of book contains. We read with the greatest benefit when receptive and we must have the book then, not tomorrow or next day. By tomorrow a mood may be gone, or the desire to look up a fact, an article or a view may be forgotten. No distant library, however large and complete it may be, is a perfect substitute for even a small library in the house."—John Chalmers Da Costa.

"Surgery is not only a matter of operating skilfully. It must engage in its service qualities of mind and of heart that raise it to the very highest pinnacle of human endeavour. A patient can offer you no higher tribute than to entrust you with his life and his health, and, by implication, with the happiness of all his family. To be worthy of his trust we must submit for a lifetime to the constant discipline of unwearied effort in the search of knowledge, and of most reverent devotion to every detail in every operation that we perform."—Lord Moynihan.

WAYSIDE GLEANINGS OF A PIONEER SURGEON

JOHN E. SUMMERS, M. D.,
Omaha, Nebraska.

This Syllabus has been assembled in appreciation of the personal friendships and the professional assistance of many physicians and fellow surgeons in the Middle West. The work represented is the minor part of that done. Having enjoyed a rather wide acquaintance among the surgeons of this country and some abroad, I want to take this opportunity to state that I believe in no part of the United States will a better average of good professional qualifications be found than among the physicians and surgeons of the Middle West—I refer particularly to Nebraska, Iowa, and their bordering states. The medical schools are real "Class A", and among their students are the progeny of the pioneers who changed the "Great American Desert" into the "Agricultural Garden of the Continent." I believe that the spirit of this part of the country has and still develops the unusually good, self reliant, all-around man, hence the progressive physician and the specialist with a good foundation. Education in the west is not backward. The western physician travels more to see and discuss with others the problems of his profession, and there are no secrets in worthwhile medicine.

The Syllabus includes all of my papers published in various medical journals. Many of these and others not published were read before the different medical societies of which I have been a member since 1886. Besides these writings there were sixty book reviews written for the *Military Surgeon* during the editors-ship of the late Colonel Hoff and Colonel Church. These books were all upon surgical subjects, a number in the French language.

I contributed the article upon "Injuries and Diseases of the Face and Jaws" in Binnie's *Treatise of Regional Surgery*, Vol. 1. I also published a monograph on *The Modern Treatment of Wounds, in* 1899. Notes on clinical lectures and many operations done at the Immanuel Hospital, where for the first five years of its existence I did all of the surgery, notes also of the operations and instructive cases studied at the Wise, Clarkson, and University Hospitals and the Douglas County Hospital to date, have been recorded. I purpose to publish these and selected notes and deductions drawn from experiences gained from work done in private homes, especially those in the country and on the farm, also data from the Syllabus which will show wherein changes in practice have taken place during the years of my experience.

In the surgery of the acute abdomen, with the exception of a few, in most instances not vital details, there has been little improvement in recent years in diagnostic recognition or operative technique. There is, however, an increased morbidity and mortality in evidence today as compared with the emergency surgery of twenty years ago, because of a cocksuredness of unseasoned judgment. There seems also a lessened knowledge in the care of wounds as compared to the enthusiasm in the making of them.

The Syllabus represents the recorded outline of the life work to date of a surgeon of the Middle West. The beginning was parallel with the general acceptance of the Listerian or antiseptic treatment of wounds. In America and on the continent of Europe the teachings of Pasteur and Lister of the germ theory of disease as applied to surgery, were acknowledged. In England on the contrary I saw the leading surgeons of London operating, wearing old blood stained frock coats without any precaution of cleanliness of person or technique as recognized today.

When I located in Omaha there was no one paying any particular attention to surgery. There were a number of most capable general practitioners who did excellent work; many who had been in the army during the Civil War were men of wide experience but not trained in antiseptic surgical technique. I soon began to do surgery. My first operation was a successful amputation of the thigh, done in Blair, Nebraska, for a gun shot (rifle) wound of the knee-joint. Many tracheotomies were done for diphtheria. Several years later intubation, O'Dwyer's method, nearly eliminated the tracheotomy operation. The discovery of the germ causing diphtheria and the making of the antitoxin has almost done away with the necessity of intubations.

The mortality of my tracheotomy operations for diphtheria was high, as was that of others, but, not so high as that of my eminent teacher of Diseases of Children, Abraham Jacobi—100 consecutive tracheotomies, 100 deaths.

As an interlude the following may be told as an example of a physician's over-enthusiasm and the resultant reaction: Few men who have sucked an obstructed tracheotomy tube and spat out the diphtheritic membrane have escaped infection and lived to tell the tale. I did this after an urgent emergency operation in a farm home, upon a child patient of my friend Dr. B. W. Hall, now of Benson, Nebraska. formerly of Bennington. Postoperative—while riding homeward on a farm wagon reflecting upon this incident, the driver being a tobacco chewer I begged the sharing of his plug, chewed lustily, and upon arrival home indulged freely in *spiritus frumenti*—both prophylactic myths, humanly applied.

I became the surgeon of the Clarkson Hospital on my arrival in Omaha and for years did practically all of the work there, and participated in establishing in this institution the first training school for nurses in Nebraska. The Clarkson, being the only downtown hospital, took care of the most of the emergency work of the city. I controlled the work, owned and operated the only ambulance in Omaha, an up-to-date New York City outfit which was known as the Clarkson Hospital ambulance. All types of accidents were admitted; there were many abdominal injuries such as run-over accidents, gun-shot and stab wounds, in addition to fractures and crushing wounds of the extremities requiring amputation; in this period I did two fore-quarter amputations (arm, clavicle and scapula) for malignancy, also nineteen fractures of the skull were operated upon one year. In later years systematic clinics were held at the Clarkson Hospital embracing a wide field in general and gynecological surgery. Since the erection of the County Hospital, forty years ago, up until within the present year, I have been a member of the staff and during most of the many years have been Chief of the Staff, practically in charge of the surgery of the institution, which has covered a wide field, embracing both acute and chronic diseases—hundreds of fractures of different kinds have been treated.

Although not emphasized in the Syllabus, the operation of ovariotomy and later hysterectomy were of frequent performance. The surgeon of today has little knowledge of what ovariotomies were at that time and earlier. Greig Smith, in his remarkable book "*Abdominal Surgery*", 1887-88, says, "By far the most important and extensive part of abdominal surgery is concerned with tumors of the ovary. It was here that the surgery of the abdomen signalized its first triumphs; and it has been chiefly through the practical experience gained in this field that the present proud position of peritoneal surgery has been established."

From neglect, fear, ignorance and the known high operative mortality, ovarian tumors were allowed to grow until in very many instances the size of these tumors equaled in weight from one-quarter to three-quarters, or even the entire weight of the rest of the body. The tumors were met with often, they formed almost the entire practice of several very distinguished men who were renowned for their skill and success in operating. The history of ovariotomy is well known. A country doctor in America, McDowell, was the first to perform the operation, and country doctors, both in America and England did most to teach their city confreres the usefulness and propriety of the operation, which for years was described as almost murder.

There are more men seeking to do abdominal operations in Nebraska and Iowa today than there were in the whole United States when I began this kind of work. The vast majority of these men know little about ovarian tumors as they were. They are plucked now-a-days by a horde of operators, and in many instances fortunately for women, before these tumors have grown beyond the size of an orange or grapefruit, or complications have had time to develop. At our University Hospital. which serves the whole state, we seldom see more than two or three medium sized ovarian tumors in a year. The surgeon of the last twenty-five years' production knows little about these growths compared to his colleagues, pupils of the teachings chiefly of Sir Spencer Wells, Thornton, Bantock, Lawson Tait, and Mayo Robson in England; Peaslee, T. Gailard Thomas, the Atlee Brothers of Pennsylvania, and Joseph Price, a pupil of Lawson Tait's, in America; Koeberle, Billroth, Martin and others on the Continent. Their mortality rates were very low—Tait had 139 cases without a death—and these were real tumors of the variable sizes of the period, with their many complications.

Greig Smith, 1888, says, "Ovariotomy is the most successful major operation in surgery. Within the memory of living surgeons its mortality has diminished from what was almost the limit of the justifiable in surgery, to a figure which, as statistics are estimated, is practically zero."

The story of abdominal hysterectomy is very similar to that of ovariotomy. Some of the best operators, Schroeder, Olshausen, Braun and Tauffer, reported together 539 cases; there was a mortality of 30 per cent. Later, Keith, Lawson Tait, Bantock, and Thornton, reduced the mortality under 15 per cent, today it should be under 4 per cent for all types of cases. I really learned this operation (earlier technique) from Joseph Price, having seen Continental operators work, but I never satisfactorily absorbed their technique. The best technique I have studied, seen and tried to follow, among others, has been that of Senn, Howard Kelly, William and Charles Mayo, Baldwin of Ohio, and Deaver. From these writers and teachers, and much experience, I have developed a personal technique which aims at absolute hemostasis and a complete peritonization of all raw surfaces. Of late years I have acquired a strong leaning towards French surgery.

Myself and several colleagues in Nebraska and a few of my oldest friends in Iowa have participated in the development of the surgery of the appendix, the gallbladder and its ducts, also of the surgery of the gastro-intestinal tract. I was present, sitting on a front seat, when Billroth did his "Billroth No. 2" operation. His two chief assistants were Wolfler and Von Hacker, the originators of the gastro-enterostomy procedure—the first the anterior, the latter the posterior. Both of these men taught me operative surgery on the cadaver. For many months I profited by listening to and watching Billroth work—a great man.

When I talk to students and young doctors I like to encourage them to take part in the making of greater progress in the future than has been made in the past. Science is stepping forward and in no greater degree than in its application to the study of man in health and disease.

An increasing knowledge of physiology, biology, chemistry, hematology, and bacteriology, the study of the functions of organs as the kidneys and liver, the icteric index, Vanden Bergh's test, basal metabolism, and the remarkable progress in the making of x-ray photographs and their interpretation, has made possible a positive advanced diagnostic accuracy of the pathology of the whole body. To this has been added, particularly in the surgery of new growths, benign and malignant, of the gastro-intestinal tract, an impetus for a more hopeful prognosis, both as to healthful function and increased expectancy of life. Cystoscopy, ureteral catheterization, functional kidney tests and the x-ray has positively revolutionized the surgery of urology. More exact diagnoses and end-results are demanded by the public as to restoration of function and the nature and extent of infections involved in injuries and diseases of bones and joints; types of tumors are positively diagnosed and a prognosis made possible. The x-ray and radium are also valuable therapeutic agents and have as adjuncts or principals made progressive strides in medical and surgical therapeutics. To all of the above most requisite is the advantageous employment of one's own senses, together with the obtaining of a good history properly interpreted—an art.

In the treatment of ulcer of the stomach and duodenum, I am an advocate of the non-radical management, i. e., I advocate as a rule excision of the ulcer with or without an accessory gastro-jejunostomy in the chronic case, in the perforated case, repair of the perforation usually without a supplementary gastro-jejunostomy. In the surgery of the gallbladder and biliary tract, I do not believe that the gallbladder should be removed so often as it is being done. The Graham-Cole Test for visualization of the gallbladder is a valuable addition as a diagnostic aid, but it should correlate with a confirmatory history and clinical findings. Too often the pathology does not justify the morbidity expense and risk of the operation. Lives are sacrificed by not too skilled operators making slips, or rather gross technical errors. Others ignorant of the pathology of acute infections and its reaction upon the general constitution, operate at the inopportune time of the infection, with fatal consequences. If any operation is done in such instances it should be of a drainage type, not a cholecystectomy. Mayo Robson, Hans Kehr, Hartmann, Moynihan, the Mayos, Judd, Balfour, Crile, L. L. McArthur, Deaver and others, have been the men whose work has given me much direction in these branches of surgery.

It is humiliating to acknowledge the justification of the public in berating us for the climbing death rate in appendicitis. The statistics of the insurance companies justify this. A most urgent revision of the surgery of the intestinal tract, particularly that of the appendix, is necessary. The death rate of appendicitis is climbing, so that now in America (1932) it is from two to five times that of other civilized nations of the globe. This is not the fault of those who developed and perfected the technique and the opportune time for operation, but rather a disregarding of such teachings, Ochner's and J. B. Murphy's particularly. This is especially noticeable since 1910. A death rate increase from then of 13.3 per 100,000 to today of 18.1 per 100,000; 20,000 deaths from appendicitis occur a year in the United States, practically all after operation. Reckless work is being done by overly-ambitious, unseasoned operators. The public may some day learn the difference between surgeons and operators. Teachers in our schools should themselves be more careful in explaining the time when to and when not to operate, and in their work using internes as assistants, emphasize the details of safety and the reasons. The neophyte cannot copy such work, he must learn to act according to the local pathology and the general condition of his patient.

Teachers of experience must more positively emphasize the necessity of early recognition of acute intestinal obstruction, and the duty of early operation. The average high mortality of today, 60 per cent, is no better than that of thirty years ago. It should not exceed 10 per cent.

We read in the contemporary medical press of the statement that by the use of insulin and a suitable diet the surgery of diabetics can be made practically as safe as that of the non-diabetics with the same pathology. This is not so. The diabetic is always a handicapped individual irrespective of the added pathology, and the wise physician and surgeon should bear this in mind. I quote from a paper of the Syllabus, "Notes on Clinical Surgery," 1924

"In a proposed amputation for gangrene in a diabetic—the gangrene involving a greater or less part of the foot—there are two cardinal rules to bear in mind: First, the proper general preparation of the patient, the urine and blood should be rendered as free from sugar as possible by diet, and the administration of alkalies with or without the use of insulin, as experience with this drug in general medical and surgical practice develops. Second, the amputation should always be made above the knee-joint, through the lower third of the thigh; there is too much danger of sloughing and non-union of the flaps if the limb is removed below the knee. Many experiences in both private and public practice have proven to me the wisdom of these rules. Every diabetic, the subject of a proposed operation, no matter how trifling, should have the benefit of proper preparation as just indicated, and when possible the work should be done under spinal or local anesthesia."

I want emphatically to go on record as I have in my papers that cancer is an infection, first local, then becoming general. It metastasizes as does tuberculosis and syphilis, only the wandering cells reproduce themselves as growths of the same types of tissue as that of the original focus —nothing strange, just different from the others which when they metastasize excite infections and growths of the types of tissue in which they are lodged. There is a hereditary resistance as well as weakness towards the cause (germ) of cancer. The disease will continue to increase in frequency until its cause is discovered and preventive methods developed, or until a remedy is found as was quinine for malaria, mercury and salvarsan for syphilis. Its treatment to date has only been, if possible, complete removal of the primary focus, added in certain localities, as the breast, attempts to follow as far as practicable and remove all lymphatics whether apparently normal or tactily involved, to the surgical limits of their anatomical termini. This removal is accomplished by the knife, diathermy, or cautery. The x-ray and radium are used as principals or adjuvants in attempts to eradicate the invasion.

There are diseases due to overburdened function, nephritis for example; disturbed function, as of the endocrine glands; disturbances of nutrition as scurvy and rickets; a weakness developing in some organ or viscus, possibly inherited as diabetes. But there is no disease of man, plant, beast or insect that is spontaneous in origin, they all are due to some activating germ either by direct inoculation or through the medium of a host. Yellow fever, anthrax, sleeping sickness, typhus, mountain fever, malaria, *et al,* are examples. So I believe with cancer, *it is not spontaneous in origin.* We are all subject to the infection, especially at the favorite locations where irritation is most common. Each individual, according to his inheritance, habitation, social life, and conditon of general health, has his personal resistance to infection. Every vertebrate may have cancer, and it is in the power of resistance to the universal element of infection that escape occurs. Most people resist it as they are positively or relatively immune, their type of inheritance. Others in gradations of resistance by the type, severity and rapidity of the invasion.

The true story of jejunostomy in acute intestinal obstruction has never been told. As is now well known, Victor Bonney recommended and published the procedure first in 1910, "Post-Operative Paralytic Obstruction of the Intestine, With Special Reference to Its Treatment by Jejunostomy" (*Archives of Middlesex Hosp. Rep.*), and again in 1916, "Faecal and Intestinal Vomiting and Jejunostomy" (*Brit. M. J.*). He discussed jejunostomy and post-operative ileus. Hugh McKenna, Chicago, in 1913 published a paper "Drainage of the Upper Intestinal Loop for the Relief of Ileus; Based Upon Eight Clinical Cases Successfully Operated, and Animal Experimentation" (*Surg., Gynec. & Obst.*). He made no reference to Bonney and gave the following conclusions: "Disturbance of innervation to the upper intestinal tract in the human is sufficient to stop peristalsis; high intestinal stasis, whether paralytic or mechanical is a fatal factor in acute obstruction and may be due to the secretions from the duodenal mucosa. The fatal factor in general peritonitis may be due to a duodenal secretion and not to the effect of infection per se. When the condition of an acute ileus is definitely established, the duodenum should be drained early. The duodenum can best be drained by performing a jejunostomy." The technique was by sewing the jejuneum to the skin, making an intestinal fistula.

"Jejunostomy—The Rational Operation for Obstruction of the Bowels", by A. I. McKinnon (deceased Dec., 1931), of Lincoln, Nebraska, (*Medical Herald*, 1917), gave no reference to Bonney, nor to any other man or literature; only a vague one to gastrostomy. Technic, a jejunostomy done as an ordinary, non-leaking enterostomy, using a double purse-string suture, carrying a small size catheter for drainage; intestine not fastened to the parietal peritoneum. He reported five cases, all recovered.

Following all of these papers *never a line discussing the subject of jejunostomy for obstruction of the bowels, appeared in American medical literature.* No evidence that Bonney or his work had ever been appreciated, his name not mentioned.

In 1920 I read a paper before the American Surgical Association entitled "Acute Intestinal Obstruction. The Cause of the Continued High Mortality; How This May Be Reduced", advocating jejunostomy and reporting cases. The paper was published in the *Annals of Surgery*. Again in the same year I read a paper on "Enterostomy in the Treatment of Acute Intestinal Obstruction", before the Clinical Congress of American College of Surgeons, Montreal, published in *Surgery, Gynecology and Obstetrics*. Immediately after the reading and publishing of these papers the subject of jejunostomy was brought to the fore, and it has since appeared and been discussed many times in our medical literature. This was because of the fact that the interest of active, progressive surgeons had been stimulated. Bonney was introduced and his theories advocating jejunostomy explained; references to his original papers were given. McKenna's and McKinnon's work was original, each having overlooked Bonney's writings.

McKenna's work which was excellent should have had early attention. It dealt in particular with poisonous absorption from the duodenum, a subject so often discussed now-a-days. McKinnon, a good practical surgeon, changed the type of jejunostomy from that by Bonney and McKenna which were essentially enterostomies of the Nelaton type, requiring subsequent closure; the enterostomy as performed by McKinnon did not. McKinnon must also be credited with having recommended, what he called a "complimentary" jejunostomy. One to give drainage and rest following operations involving the integrity of the intestine below or stomach above. McKinnon and Donald Macrae, Jr., of Council Bluffs (recently deceased)—one of America's most distinguished and best surgeons—each did several hundred jejunostomies either as direct or complementary prophylactic procedures.

SURGICAL THERAPEUTICS

"Surgery is participating more and more in the treatment of so-called medical disease. It is the characteristic and dominant note in contemporary therapeutics. This participation is extending into all branches of pathology—principally into the maladies of the digestive system, but also into those of the respiratory system, of the circulatory system, of the nervous system, to tumors of the endocrine glands, hypophysis, suprarenal and thyroid. It is the duty of the physician before recommending a surgical procedure to make an exact and complete diagnosis and on the other hand it is no less his duty to study and set forth the contra-indications to an operation, although it may be justified in principle. .

To this end the clinical status of the patient must be determined, his degree of resistance, the condition of his heart, of his blood vessels, etc.; but still more all necessary laboratory researches to complete the diagnosis and to establish the patient's functional capacity; that is to say that in each case one should not neglect to examine the urine, the blood, and to measure the arterial tension. It would be culpable to recommend an operation on an individual presenting a serious anaemia, a marked azotemia, advanced renal disease, a high arterial tension, a leukemic blood picture.

It may be proper when in spite of the evident risks, these should be brushed aside if the life of the subject is in imminent danger because of the presence of a strangulated hernia, an acute intestinal obstruction, a perforated gastric ulcer. In parallel occurrences the friends or family of the patient should be informed of the seriousness of the situation and one should not neglect to ask for a consultation with a colleague in order to further establish the correctness of the contemplated operation and to divide the responsibility."

(Personal Editorial in *The Nebraska State*

Medical Journal, August. 1931, notations from "*Les Therapeutiques Nouvelles*" by Gaston Lyon.)

This editorial, which had its springhead from the pen of Gaston Lyon, places before us in principle a line of conduct in concordance with our knowledge of the science of medicine of our time; reminds us of our duty in the practice of our profession. Following it no one can go astray. As inevitable advancement is added to our knowledge, the duty to our patrons and to ourselves will always remain the same.

SOME ANNOTATIONS ON THE SUMMERS SYLLABUS

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> "It is the true office of history to represent the events themselves together with the counsels, and to leave the observations and conclusions thereupon to the liberty and faculty of every man's judgment."—The Advancement of Learning, Francis Bacon.

In looking through the Syllabus of Dr. Summers' writings one is struck, first, with the number of contributions—146 papers, 60 book reviews and a volume on "The Modern Treatment of Wounds"—and second, with the wide field of surgical endeavor covered. Many papers record original procedures and their early performance in Nebraska. Although, throughout, there is shown a leaning toward emergency work in general surgery, particular interest is evident in surgery of the abdomen, in acute and chronic pathology.

If we begin with the earliest years and proceed in an orderly manner we are struck by the removal of a sand-burr from the larynx, aided by the laryngoscope, the first performed in Omaha, in 1888. Another was removed the same year by the same technique. Somewhat intimate knowledge of Dr. Summers' early training in surgery justifies this writer in stating that Dr. Summers was trained in laryngology as well as general surgery; hence, this procedure was relatively easy for him, where others had failed.

The originality and open-mindedness of Dr. Summers early asserted itself, for in 1889 he did the first wide-open incision for wry-neck found in literature, with happy results.

In 1889 the first nephropexy in Nebraska was done at Nebraska City by Dr. Summers—Drs. Whitten and Watson. local physicians, assisting.

The removal of the appendix for suppurative appendicitis in a child of twenty-one months, with recovery of the child, was done in 1891, the youngest case for which removal of the gangrenous appendix had been done to that date.

The reader will recall that appendectomy as a recognized procedure dates from McBurney's classical paper in 1889, although Morton had done the operation a year earlier, and removal of a gangrenous appendix was heresy.

He did the first nephrectomy in Nebraska in 1893, in a case of tuberculosis of the kidney. The patient is well, today, living at Broken Bow, Nebr.

Our worthwhile knowledge of tubal pregnancy does not go back into history more than about forty years. It is interesting, therefore, to read in the Syllabus "The Clinical Aspects of Tubal Pregnancy, Based on an Experience in Eight Cases" (1897). (Parenthetically, the writer may state that he furnished one of those eight cases.) During the passing years Dr. Summers has operated on about one hundred cases of tubal pregnancy.

He performed internal esophagotomy. successfully, after the method of Abbe in 1897 for stricture in a child, produced by concentrated lye. He repeated the same operation successfully on a post typhoidal stricture of the esophagus. This was the third case reported and the first successfully operated upon. See Keen's "Surgical Complications and Sequels of Typhoid Fever".

He reported the first case in America and the third in literature of Choledocho-enterostomy done in 1899 and reported it in the *Journal A. M. A.,* March, 1900.

It may seem trite to twentieth century members of the profession to read of a surgeon appearing before an annual meeting advocating rubber gloves; but rubber gloves in surgery came along with the turn of the century and Dr. Summers was one of the first advocates of their use and presented a paper on the subject in 1899. Two years earlier there appeared in the *Western Medical Review* his paper "Disinfection of the Hands and Forearms of the Surgeon. Sterilization of Ligatures and Suturing Materials".

In 1901 he reported a nephrectomy done on a child of two years of age, for tuberculosis—the youngest patient on record to this date from whom a tuberculous kidney has been removed. Patient is well, and living at Calloway, Nebr. Incidentally a double ureter was found in this patient.

He long ago became impressed with the importance of the early recognition and immediate operation of intestinal obstruction and published an article on the subject in 1908. Dr. W. J. Mayo, in Binnie's "Regional Surgery", v. 2, p. 191, comments on Dr. Summers' work in this field. He was an early advocate of jejunostomy as a life saving measure in these cases and always firmly supported our late Doctor MacKinnon's work on complemental jejunostomy.

In 1911 he published "The Possible Diagnosis and a Techniue in Excision of the Chronic Indurated Ulcer of the Posterior Wall of the Stomach. (Illustrated)." Sir Berkeley Moynihan in his "Abdominal Surgery," v. 1, p. 269, describes Dr. Summers' technique and comments on his work in abdominal surgery. In 1911, he published also as an original procedure "Peritonization in Pelvic Surgery With Special Reference to the Use of the Sigmoid Flexure and Colon."

Not content with the limits of the field of general and abdominal surgery, in 1913 he entered the newer field of surgery of the heart by doing the first Cardiolysis (Brauer's) operation in America and renamed the operation "Decompression."

He originated the procedure and in 1908 operated and published the result of "The Treatment of Limited Annular Gangrene of the Small Bowel by Invagination Versus Resection." He carried out this procedure in two cases with successful results. Binnie in his "Operative Surgery", p. 451, quotes this procedure and gives credit to Dr. Summers. He published a later paper on this procedure in 1927 and reported a recent case in the October, 1931, *The Nebraska State Medical Journal.*

It is but natural that a man of Dr. Summers' originality in surgical procedure should have ideas of his own on the causation of cancer. He believes that it is not spontaneous in origin, but that it is by infection at favored localities where irritation is most common.

He makes the statement in another place that "there is no disease of man, plant, beast or insect, that is spontaneous in origin—they are all due to some activating germ either by direct inoculation or through the medium of a host"—and no one has been able to prove anything to the contrary. He realizes that his position has not been a favored one of recent years; but he feels that it is a reasonable position. The infecting agent of cancer will probably some day be discovered and then we may all see how simple it turns out to be.

He published papers on duodeno-jejunostomy in 1928 and 1929 and reported the only cases of that operation ever reported from Nebraska.

In 1930 he became interested in Normet's Solution as an emergency substitute for blood transfusion and published an article on the subject in *The Nebraska State Medical Journal,* 1930, v. 15, p. 457, in which he reports nineteen successfully operated on cases—three dangerous ectopic hemorrhages, a stab wound in the chest ripping the pericardium and flooding the chest cavity and other life threatening hemorrhages accidental and pathological.

The Syllabus, indicates his early interest in spinal anaesthesia; his use of the actual cautery and the radio knife in cancer; his conservatism in chronic pathology of gastric and duodenal ulcer and urgent restrictive operative procedure in the acute types, etc., etc.

The Syllabus indicates work of a lifelong student, together with courage of convictions and conservatism of the highest order.

Methuselah lived 969 years—but they had no regular physicians in those days.—Washington Dirge.

"As for antiseptics, no chemical antiseptic can command good results with bad surgery; good surgery commands good results without chemical antiseptics, but the best results are the sum of good surgery and the good use of chemical antiseptics. In the period of contamination, the state of depressed vitality of the wound is overcome by exquisite excision of devitalized tissue; by general and local physiologic rest; by assisting the re-invigorated wound to overcome the contamination by the use of antiseptics that do not interfere with the defense of the wound; by leaving the wound temporarily open. If this plan be carried out, the incidence of acute infections will be minimized and the wound may be closed early by loose stitches or by adhesive plaster."—Crile.

CLINICAL ASPECTS OF THE CANCER PROBLEM

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It is not my purpose at this time to discuss the laboratory studies of cancer nor to make any references to the enormous literature on different phases of this vast subject, but rather to draw certain conclusions from the experience of my associates and myself in the treatment of 7,005 cases of cancer.

It is obvious that no one general rule of treatment, whether by surgery, irradiation or both can apply equally to malignant tumors of the different organs and tissues. Two general rules may, however, be stated and should be emphasized: (1) when possible every precancerous lesion should be removed; and (2) an established cancer should be removed radically if it is operable; if inoperable then palliative surgery or radiation or both should be applied.

From the mass of investigations into the cause and treatment of cancer no other safe method of dealing with a cancer has as yet evolved. From all of these studies which have included the incidence of cancer in relation to race, climate, age and the bodily tissues, method of growth, the effects of various physical and chemical agents we have learned one sure fact, namely, that cancer, whether of the external and visible parts or of the internal, invisible organs, obeys one general law of growth, and the old dictum based entirely upon clinical experience is established more uniformly than ever—namely, that the one and only cure for cancer is its early and complete removal. It is probable that with extending knowledge of the operation of physical laws in biological processes, new light may be thrown upon the causation of malignant growths, and that from this knowledge new methods of cure may be evolved. Already, investigations have shown that the electric capacity and conductivity of cancer of any part far exceeds the capacity and conductivity of the normal tissue, while the potential in cancer is opposite to that in normal tissue. The histologic appearance of a cancer offers a static picture of the cells. The capacity and potential measurements present the dynamic status of the cells, and it is with the dynamic status of the cells that we are primarily concerned in interpreting the status of any malignant or pre-malignant condition.

Whatever these and other investigations may disclose in the future it is true that at present we must be guided by clinical experience and it is in order that these personal experiences of my associates and myself may be evaluated with those of other reporters that this paper is offered.

Before proceeding to a discussion of cancer of the different organs and tissues, a statement regarding precancerous lesions should be included here. To my knowledge no cancer of the skin has ever grown upon a normal uninjured surface. Cancers of the skin are always located where there have been tumors, scars, moles, warts, keratoses or some form of irritation. The precancer stage may be a long one—a story of little scales picked off as often as they appeared; of a wart frequently irritated; of a neglected ulcer; of occupational irritation, etc.

Rarely, if ever, does cancer of the mouth occur in a perfectly sanitary mouth with normal teeth. There is always present an irritation from a ragged tooth, from leukoplakia, a fissure or a wart.

So, too, we know of few cancers of the gallbladder without gallstone irritation; few or no cancers of the kidneys without stone irritation. In the intestinal tract cancer selects irritated areas such as the esophagus, the pylorus, the splenic flexure, the rectum.

We may conclude, therefore, that, in general, a precancer stage usually if not always exists and that in most instances the precancerous condition is remediable. Yet in spite of this fact, even in the visible precancerous conditions, how frequently do the physician and the patient supinely and irresolutely wait for disaster.

If every chronic irritation were removed; every chronic ulcer, wherever located, healed or excised; if every wart and mole were removed and every keratosis cured; if the mouth were kept wholesome and the teeth smooth; if unhealthy scar tissue were always removed and if needed the surface covered by skin grafting, then the problem of cancer of the skin and the mouth could be measurably if not completely solved.

The precancer conditions in the internal organs are in many instances no less amenable to treatment; the syphilitic ulcer or the papilloma which induces cancer of the larynx; the chronic ulcer of the stomach; the irritating stones and chronic inflammations of the gallbladder; the ulcers and chronic irritations of the large intestine and the rectum; the stones in the pelvis of the kidney; the benign tumor or inflammation of the breast; and so on through the long list of sources of irritation.

In view of this potency of the precancerous lesion the dictum that every precancerous lesion should be removed when removal is possible is secure.

The Skin: Radium appears to be the most efficient method for the treatment of cancer of the skin and subcutaneous tissues according to our experience with 597 cases with one exception—a pigmented mole should always be excised.

Cancer of the Buccal Surfaces: A study of 4500 reported autopsies performed in patients who had died from cancer of the head and neck made for me some years ago by Dr. L. W. Hitchings showed that in less than one per cent were secondary cancer foci found in distant organs and tissues. This localization of the cancer is due to the protection afforded by the collar of lymphatics of the neck, every portion of which is readily accessible. As far as metastatic dissemination is concerned cancer of the head and neck presents a far more favorable outlook than does cancer of the breast, the lymph channels from which lead to thoracic and abdominal metastases, or cancer of the stomach or intestines with its inaccessible retroperitoneal and liver metastases.

Above this lymphatic barrier metastases may take place rapidly, although cancer of each part of the head seems to follow a law of its own. Thus, cancers of the skin, of the mucous membrane of the cheeks, of the mucous membrane of the edge of the jaw, usually do not metastasize; cancers of the lip almost uniformly metastasize to the lymphatic glands under the jaw; cancer of the floor of the mouth usually metastasizes in the glands of the same side. Paired organs or distinctly one-sided foci usually metastasize regularly; while unpaired organs, as the tongue, or mesial tissue, such as the middle of the lip, metastasize irregularly and widely. For example: a marginal cancer of one side of the tongue may metastasize to the glands of the opposite side, usually low down toward the clavicle, although the metastasis may occur at any site, high or low, on the right or the left side.

Early cancers of the buccal surfaces are usually treated by radium but once it has advanced to the stage where lymphatic invasion is possible not only should the primary focus be removed but a block dissection of the regional lymphatics should be done also. The local excision of the primary focus alone is as illogical as the excision of a cancer of the breast without the removal of the regional glands. Next in importance to the block regional excision is the minimum handling of the carcinomatous tissue to avoid the possibility of the implantation of cancer cells in the operative field. In certain cases cauterization is the method of choice for the removal of the primary focus. Thus cancer within the mouth may be destroyed completely and more easily by the cautery than by surgical operation. In the choice of method, however, it should be borne in mind that surgery produces the best scars, and when the cancer is in the cheek or well back in the jaw the cautery may produce a badly contracting scar and a plastic operation in a postoperative cancer field is to be avoided. Moreover, the cautery does not provide for the removal of a "platter" of underlying bone as is advisable in cases of cancer of the buccal mucous membranes.

It should be emphasized that while radiation of the local lesion may be indicated, radiation of the involved lymphatic glands of the neck should not be done, as this treatment cannot be depended upon. If the glands of the neck have been irradiated and the patient has recovered, we must conclude that the glands of the neck probably were not involved. After operation on any part of this field, postoperative treatment with deep, accurately measured x-ray or radium radiation is of advantage.

Our series includes 564 cases of cancer of the buccal surfaces among which there were 259 cases of cancer of the lip, and 128 cases of cancer of the tongue.

The Antrum: In the treatment of cancer of the antrum, of which our series includes 30 cases, any method which destroys the tumor is of value as it is enclosed in a bony box. Treatment with radium is, therefore, eminently successful although the application of diathermy and the electrocautery may be followed by good results. Whatever method for the removal of the tumor itself is employed a wide open surface wound is necessary, a point which has been emphasized by Dr. T. E. Jones, as this makes it possible to see and treat any recurrences as soon as they develop.

The Larynx: In view of the strategic position and importance of the larynx in its relation to the respiratory tract, it is not surprising that the encroachment upon or within it of a malignant growth should be viewed by the layman with peculiar and almost hopeless dread, or that the successful removal of the larynx should be one of the later achievements of surgery. Yet the complete extirpation of an intrinsic cancer of the larynx is one of the most successful operations for cancer as far as the ultimate cure of the cancer is concerned, and the comparative safety of the laryngectomy itself is attested by the fact that in my own series of cases the mortality rate compares favorably with that of excisions of the tongue or of the rectum for cancer.

The ultimate cure of a given case of cancer of the larynx depends principally upon whether it is primary or secondary; and if primary, whether it is intrinsic or extrinsic. If secondary, the cancer is an extension through the lymph channels from the tongue, throat or some other part of the head or neck, and it is obvious that, in such a case, the removal of the larynx would almost inevitably be futile.

Extrinsic cancer of the larynx, as the term implies, has its origin in some part or parts outside the larynx proper, such as the epiglottis or the arytenoids. Because of the abundance of lymphatic connections, this form of laryngeal cancer extends rapidly and is quickly fatal, and operation for its relief is at best but a desperate palliative remedy.

Intrinsic laryngeal cancer, on the other hand, starts within the larynx itself, in the vocal cords, the ventricular bands or the parts below. Since the walls of the larynx consist of hyaline cartilage, and cancer can rarely penetrate cartilage, intrinsic cancer of the larynx is contained as it were in a safety deposit box. Its only avenues of egress are through the thyro-hyoidean membrane, through mucous membrane invasion upward, and to a very limited extent through the sparsely supplied lymphatics. Because of the early involvement of the vocal cords, the presence of the cancer is early made known by every spoken word and there is a persistent hoarseness which promptly leads the patient to seek relief. Not every instance of chronic hoarseness, however, is due to cancer.

In extrinsic cancer of the larynx the only hope lies in the local removal of the growth and a block dissection of the gland-bearing area. In inoperable cases in which only tracheotomy can be attempted radium is of value as a palliative measure.

For intrinsic cancer of the larynx, laryngectomy is indicated. If the cancer is entirely intrinsic, laryngectomy offers a practical certainty of cure. Radium, therefore, is not indicated but the postoperative application of the x-ray may be of value as it may check any extension of the growth for there may be some undiscovered extrinsic focus or some cancer cells may become imbedded in the course of the operation.

Our series includes 159 cases of cancer of the larynx, in 74 of which laryngectomy was performed. Among the patients regarding whom we have later data, seven have survived for more than five years; of these seven patients, one has lived 17 years and one 31 years.

The Thyroid Gland: In our total series of 16,770 thyroidectomies there has been a malignant tumor in 265 cases. In about 90 per cent of these cases malignancy was due to the degeneration of an adenoma. For this reason I believe that all adenomata should be removed. Treatment of malignant tumors of the thyroid gland is thus mainly a problem of prevention. Once malignant changes have taken place in the gland, it should be removed surgically if possible; otherwise, it should be treated with x-rays. If the malignant process has developed to the inoperable stage, a decompression operation will give temporary relief from obstruction and the resultant partial asphyxiation, and this operation should be followed by radiation.

It has been estimated that in the average case of inoperable carcinoma of the thyroid the patient will live without radiation for approximately a year. There is, at present, no basis upon which to be found a judgment as to the average length of life when such a case is treated with radiation. In all cases of malignant disease of the thyroid, however treated, the possibility that myxedema may develop should be borne in mind. This condition, however, is readily corrected by the administration of thyroid extract.

Sometimes, as the result of radiation, the carcinoma will disappear; in other cases radiation seems to be of no avail. What the end-result of decompression and radiation may be in any given case cannot be foretold, but the patient is certain to have a period of relief. It must be borne in mind that involvement of the neighboring tissues is almost sure to be present, and that if the cancer involves the trachea there is practically no hope of cure.

The Breast: The one important point to bear in mind in the consideration of any tumor of the breast is that it may be the starting point of a malignant growth. This is true whatever etiological factors may seem to have been involved in the formation of the tumor; whatever its site, whatever the age of the patient, whatever the family history may disclose. There are certain lesions of the breast, however, which may safely be omitted from this generalization; simple cysts, lipomata, traumatic fat necrosis, hypertrophy, acute mastitis, mastitis neonatorum, mastitis adolescentium, echinococcus cysts, and syphilis.

Chronic mastitis deserves special consideration because of the diversity of opinion as to its cancerous potentialities. In general it is acknowledged that a lesion of this type may become malignant, especially if the lesion is unilateral. If the condition is present in both breasts malignant changes almost never develop.

In regard to the so-called benign tumors, Deaver has stated, "Tumors of certain types having certain structure are constantly harmless; those of other types, having another structure, are persistently invasive, destructive and constantly fatal. Unfortunately these are the extremes of a series between which lie many tumors that may or may not be harmful, or whose structures may fail to give a clue to their true disposition." I am far from recommending the radical operation in every case of tumor of the breast, but I do wish to emphasize the importance of frequent examination of the breast after the local excision of what appears to be a benign tumor, so that the radical operation may be performed immediately if the lesion shows any suspicion of malignancy. A biopsy should never be performed, for if the growth should prove to be malignant there is danger of its dissemination, and whatever its character, in any case it should be removed entirely and then sectioned.

Since the potentially precancerous lesion may be treated by simple excision while once malignancy has been established the regional glands must be removed also the problem for the surgeon is the accurate differentiation between benign and malignant tumors. Frank cancer is easily diagnosed, but the diagnosis of border-line cases is by no means a simple problem. Bloodgood at one time submitted specimens from over sixty border-line cases to a number of pathologists. These pathologists were divided into two groups, one of which favored a diagnosis of cancer, the other believed the growth to be a benign lesion. "In not a single case has there been a uniform agreement as to whether the lesion was benign or malignant."

Ewing states that "the great majority of mammary cancers are rather easily recognizable by inspection and palpation." In cases in which the clinical symptoms and the frozen section cannot give absolute proof of the character of the tumor, the utmost safety of the patient demands the complete excision of the breast and of the regional lymphatics, for unlike cancer of the head and neck or the imprisoned, intrinsic cancer of the larynx, the abundant, lymphatic channels from the breast may readily and easily produce thoracic and abdominal metastases.

There has been a great deal of discussion during recent years regarding the relative values of radium combined with deep x-ray therapy and of radical operation in the treatment of breast carcinoma. These discussions have centered about three phases of the problem: (1) the value of preoperative radiation; (2) the value of postoperative radiation; (3) radiation in preference to surgery.

From a study of the end-results in our own series, Portmann draws the following conclusions.

"1. Intensive x-ray therapy, especially by the cross-fire method, is not the preferred procedure for the postoperative treatment of carcinoma of the breast.

"2. Postoperative x-ray therapy by moderate repeated dosage decreases the number of recurrences and metastases, and prolongs the life of many patients suffering from carcinoma of the breast."

We, therefore, give radiation therapy as soon as possible after operation, not waiting until the wound is healed. Only if a case is entirely inoperable is radiation employed as a palliative measure instead of surgery.

Our series includes 1522 cases of cancer of the breast.

Esophagus: Cancer of the esophagus, of which we have seen 147 cases, is one of the most hopeless among malignant conditions as the disease is usually well developed when diagnosed and the progress of the disease is always exceedingly rapid. Thus, in a study of 31 of our cases of carcinoma of the esophagus, the duration of symptoms had been less than 10 months in all but 5 cases, less than 6 months in 18, less than 3 months in 11, less than 1 month in 6, and yet in many of these cases emaciation and exhaustion as a result of dysphagia were already marked.

Cancer of the esophagus is one of the hopeless types of malignancy as the disease is usually well developed when diagnosed. The surgical removal of the tumor is an exceedingly formidable operation and is hardly justified, the best treatment being the application of radium through an esophagostomy, and this does little good. Deep x-ray therapy is not applicable to these cases, as radiation may produce fibrosis of the lung.

Stomach: As in the case of cancer of the esophagus, a cancer of the stomach is characterized by a rapidity of growth, and an extent of lymphatic involvement so that the "dead line" of inoperability is reached very early in its progress. A period of a few weeks may be sufficient to carry the patient from an operable to a completely inoperable condition and consequently in the majority of cases the patient comes to operation too late for possible cure. A study of the records of our 713 cases of cancer of the stomach shows that the history is commonly a history of vague initial symptoms of indigestion or ulcer; that ulcer of the stomach has a moderate potentiality as a precancerous condition; that the history and the x-ray findings coupled with the effects of ulcer management on the size of the mass as revealed by repeated x-ray examinations are the most valuable means of diagnosis; that a differential diagnosis between an old ulcer and early cancer cannot be made with certainty; that when the probability of cancer is suspected an exploration should be made at once. In late cases, as in late cases of cancer elsewhere, even though the operation is survived and the local lesion removed, there is great danger of metastases. especially in the liver or retroperitoneal glands.

When operable, as in the case of cancer elsewhere, resection with the widest possible excision of the growth is the indicated procedure. Blood transfusion, saline infusions, nitrous oxide analgesia, the application of hot packs and divided operation may suffice, however, to carry through many patients in whom the prognosis appears to be hopeless, but in whom the anatomical possibilities of operations have not been passed.

Radiation cannot be applied in these cases because it is impossible to deliver sufficient radiation to the stomach to destroy a malignant process without harming the adrenals, liver, pancreas, etc.

Gallbladder: Carcinoma of the gallbladder is usually associated with cholecystitis and consequently in most cases the disease has extended into the liver and adjacent deep structures before the malignant condition is recognized, and it is then too late for any operation to be of avail. For this reason the prognosis is extremely unfavorable even after a radical operation. However, if the presence of the malignant condition is recognized before extension to the liver has occurred an immediate cholecystectomy is indicated.

Our records include 67 cases of cancer of the gall-bladder and bile ducts.

Intestines and Rectum: The diagnosis of carcinoma of the small intestine is made from the history and clinical signs and the x-ray picture. If the presence of a cancer is indicated then an exploratory operation should be performed to determine operability, with immediate removal of the growth if possible. As in the case of carcinoma of the stomach, every available method for the conservation and restoration of the patient should be employed. Our records include 25 cases of carcinoma of the small intestine.

As for cancer of the large intestine and rectum of which we have seen 819 cases, the following points summarize the present status of opinion regarding its treatment: carcinoma of the large intestine tends to remain local; wide excision of the cancer should be made—the excision including the related lymphatic glands; the cancer tissue should be handled lightly; in cases of acute obstruction a colostomy should be performed first and the resection deferred; postoperative radiation probably contributes to cure; the treatment of cancer of the cecum and of the ascending colon is more successful than that of cancer in any other portion of the large intestine.

It should never be forgotten that cancer of the large intestine, like cancer anywhere else, may spread by three routes: (a) by direct extension through tissue. (b) through the venous system, (c) through the lymphatic system. In cases of carcinoma of the large intestine and rectum, a colostomy should be performed, followed by radical operation, x-ray radiation being employed after the operation. In cases in which the growth is so low in the rectum as to be readily accessible, the implantation of radium needles and the application of radium packs may be sufficient. In inoperable cases a colostomy should be done, followed by radiation. There should be a period of about ten days between the colostomy and the final operation, or rather, between colostomy and the decision as to the method of treatment, as a period of that length of time is necessary to allow the inflammatory reactions of the disease to subside sufficiently to make it possible to determine what operation shall be performed. This decision depends, of course, upon the findings of an exploratory operation. The entire picture may change during this period.

While the application of deep x-ray radiation is beneficial after operation or after radium treatment, it is of little, if any, value in the treatment of recurrences.

A statistical study of our cases made recently by Dr. T. E. Jones shows that after resection and radiation 20.6 per cent of the patients survived for more than five years, while this survival period was reached in only 7.2 and 7.4 per cent respectively of the cases in which resection alone or radiation alone was employed. These figures show, however, as Jones has reported that although operation by the abdominoperineal route, combined with radiation, yields the best end-results with a primary mortality of 10 per cent, if operation is refused or if the condition is inoperable, there is sufficient evidence that a cure can be obtained in certain cases and marked palliation in others by the use of radium and roentgen ray.

Genito-urinary organs: In general, reliance must still be placed upon surgery for the treatment of carcinoma of the gento-urinary organs. In some cases carcinoma of the kidneys in children will be reduced by deep x-ray therapy, but the radiation must be followed later by surgery. In the case of deep seated bladder tumors, radium has seemed to prevail in certain cases, but here also the results are still too uncertain for radiation to be used routinely. Postoperative radiation is employed in many cases, but more because it is hoped that it may be of avail than because of any definite results. For malignant tumors of the kidneys in adults the indicated treatment is surgery with radiation both before and after operation. In many cases radiation will so reduce the size of the tumor that cases which have seemed to be inoperable become operable. Tumors of the kidney should be irradiated no matter how hopeless their outlook. In the case of deep-seated bladder tumors, radium has seemed to prevail in certain cases, but the results are too uncertain for radiation to be used routinely. Postoperative radiation is employed in many cases, but principally because of the hope that it may be of avail rather than because of any definite results that have been secured up to the present time.

Malignant tumors of the testes are treated by surgery with radiation both before and after operation.

Whether or not prostatectomy or radiation is the preferred treatment for carcinoma of the prostate remains to be decided. According to the belief of Dr. Lower prostatectomy is to be preferred in uncomplicated cases, but in cases in which a high blood urea cannot be reduced, radiation may provide the only possible method of treatment, or it may tide the patient over until prostatectomy can be performed. Dr. Lower's series includes 316 cases of cancer of the prostate, 379 cases of cancer of the urinary bladder, and 39 cases of cancer of the kidney and ureter.

The preferred treatment of carcinoma of the fundus still seems to be *sub judice* both as to whether surgery or radiation is the treatment of choice, and as to the type of operation to be performed. The end-results of surgery and of radiation are approximately the same. It would seem, however, that since surgery in combination with the postoperative employment of radium and x-ray gives the assurance of saving a large majority of the patients who present themselves in the operative stage, and of palliating suffering and prolonging the life with a fair prospect of ultimate cure in doubtful cases, we should hesitate to abandon such certainties for the uncertainties still presented by the use of radium and the x-ray without surgery in cases of carcinoma of the fundus.

In inoperable cases of carcinoma of the fundus deep x-ray therapy is of value as a palliative agent and for the prolongation of life.

As to carcinoma of the cervix, on the other hand, the preeminent value of radiation appears to be established. At the Cleveland Clinic we now use radiation rather than surgery in the treatment of carcinoma of the cervix, reserving our final judgment until sufficient time has elapsed for a definite comparative study of the end-results.

As the presence of any but a frankly benign tumor of the breast demands the removal of that organ, especially in a patient past middle age, so when an intermittent or continuous uterine discharge occurs in a patient who has passed the menopause, we believe that a complete hysterectomy should be performed at once. Even if the character of the discharge does not appear to indicate the presence of a malignant growth, this operation should be performed without delay.

Our records include 885 cases of carcinoma of the uterus of which 659 have been cases of carcinoma of the cervix.

Ovary: Cancer of the ovary is rarely primary. When it is primary the removal of both ovaries is indicated. If the peritoneum is extensively involved deep x-ray therapy may retard the progress of the disease.

We have confined this discussion to carcinoma of the various organs and tissues. We shall, therefore, not discuss the treatment of malignant diseases of the bones. The relative merits of the treatment of these diseases by radiation or by surgery are still *sub judice* but may finally be decided by means of the data which is being accumulated by the Registry of Bone Sarcoma of the American College of Surgeons.

In conclusion it should be emphasized that whatever his present point of view regarding the method of choice in the treatment of malignant tumor of any organ or tissue, the surgeon must hold himself in readiness to alter that view if accumulating experience indicates that other methods are to be preferred or are at least worthy of trial. It may be that as the result of the researches—clinical and experimental—which are in progress in many clinics and laboratories, some new and effective measure may be developed of which we should be ready to avail ourselves.

All the vast researches into the cause and cure of cancer have thus far yielded neither an adequate explanation of its primary cause, nor a specific cure. Until that specific cure is discovered, therefore, the one and only method of prevention is the removal of the precancerous condition.

The layman, laying aside morbid fears, must report to his physician any persistent abnormal visible growth or symptoms of abnormal interest; and the internist must instruct his patient that the early and complete removal of the affected parts offers the only hope of cure, and with the surgeon, must carry on in the clinic and laboratory researches for more definite methods of diagnosis and more efficient therapeutic agents. The surgeon, for his part, must develop his technic so that the cancerous growth may be completely removed with the least possible trauma, and must discover further means by which to conserve and increase the vital forces of his patients. As the cancer problem stands today, the disease is to be conquered only by the closest "team play" of these three—the layman, the internist, the surgeon.

CONCERNING THE NATURE OF EPIGASTRIC HERNIA AND ITS RELATION TO GASTRIC AND OTHER DISTURBANCES*

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It is well known that epigastric hernias, so-called, are due usually to the protrusion from within outwards of small bunches of fat through defects in the linea alba, which may be congenital or acquired and are not necessarily connected with the exit-points of vessels and nerves as has been quite generally believed. The term also includes real hernias of the abdominal contents, but these are comparatively uncommon and are not considered in this discussion. The condition may occasion no disturbance, or it may give rise to local symptoms, such as pain and tenderness; to general symptoms, in the form of nervous irritability, neurasthenia, etc.; or to internal symptoms, referable especially to the stomach and duodenum, and due to alterations of motility and secretion, to pyloric or other forms of spasm, to gastritis or duodenitis, and even to actual ulcers. These gastric symptoms may seem altogether out of proportion to the apparent insignificance of the original lesion: or, on the other hand, the local symptoms may be so pronounced that the internal ones are more or less obscured.

It is easy enough to explain the local symptoms by the pinching of the neck of the hernia; but the general and particularly the internal manifestations are more difficult to understand. We could assume, for instance, that the stomach might be influenced through the nerves, the vascular or the lymphatic systems, or even that a portion of the wall of the stomach might be caught in the hernia. In fact all of these theories have been advanced from time to time. As far as the first two are concerned, however, the likelihood seems to be small, on account of the absence of toxines that could be carried through these channels; and the pinching of the stomach wall cannot be seriously considered in a fat-hernia, or for that matter in any other form.

Hence the nervous system offers the most likely explanation; but it has never been quite clear just how and why an irritation of nerves in the linea alba should so profoundly affect the stomach and duodenum, as there seems to be no direct connection between these two regions. Recently, however, we are beginning to see that such a connection really does exist and appears to furnish a reasonable explanation of the gastro-intestinal and other phenomena accompanying epigastric hernia.

Schmieden and Peiper(1) and others have called attention to the anatomy of the hepatico-umbilical ligament and to the fact that it is of much more importance in abdominal symptomatology than has heretofore been assumed. They have shown that pathological conditions of this structure may give rise not only to numberless local and radiating painful sensations, but also to gastric, hepatic, pancreatic and nervous disturbances of the most diverse kinds. These disturbances seem to arise from irritation of the sympathetic and parasympathetic nerves contained in the ligament, the effects of which are transmitted to the solor plexus and from there distributed, especially to the pyloric end of the stomach and to the duodenum, with which the plexus is so intimately connected by centrifugal fibers having much to do with the functions of those organs.

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In this connection it is interesting to note the observations of Vorschutz⁽²⁾, who contends that in a similar manner irritation of vegetative nervous fibers in chronically inflamed appendices and gallbladders leads to changes in the solar plexus. These are translated into functional and organic gastro-intestinal disturbances, which may persist even after the original cause of the trouble has been removed, and he has even been able to demonstrate how they may be controlled by the injection of normal salt-solution into the plexus or its immediate vicinity. Hence the solar plexus may be regarded as a central point in the vegetative nervous system, receiving irritative impulses from various sources and sending out corresponding pathologic reactions, and the hepatico-umbilical ligament is just another of these sources of irritation.

To complete the pathologic chain, it remains to be shown how an epigastric hernia may be connected with the hepatico-umbilical ligament. This has been done by Moschowitz⁽³⁾, and more recently by Villard and Barthelemy, Napalkow⁽⁴⁾, and others, who have clearly shown in many instances that epigastric hernias are often derived from fat contained within the meshes of the ligament. I have been able to confirm this observation in cases with which I have recently come in contact, and that were accompanied with duodenal ulcers as well as local symptoms. By traction on the ligaments it was easy to see that they were directly connected with the hernias, which could fairly be pulled out of the openings through which they protruded.

Excluding mere coincidence, if the above theory is correct, then all the cases of epigastric hernia accompanied by gastro-intestinal symptoms should spring from the hepatico-umbilical ligament and not from pre-peritoneal fat alone; but, however probable this may appear, its substantiation must await further observations. In the meantime, however, it would seem to be wise always to take the ligament into consideration, and when it is found to be involved to investigate with especial care for a possible ulcer of the stomach or duodenum, which may exist even when the symptoms are almost negligible, as I have observed in at least one instance. Such investigations may mean, of course, a laparotomy, which may have to be done later on even if it is not resorted to at the first intervention, hence the great importance of preoperative x-ray examinations.

If one admits the parts played by the hepatico-umbilical ligament and the solar plexus in connection with epigastric hernia, how can one account for the general nervous symptoms often observed and for the various pains and uncomfortable sensations occurring in quite distant regions —in the shoulders, chest, abdominal walls, etc.? This is not difficult when one remembers the intimate connections between the solar plexus and the spinal ganglia, and how comparatively easily irritative impulses may overflow from these ganglia into the cerebrospinal system and be carried upward to the higher centers and outward along the various spinal nerves. Such observations are common enough in connection with gastric and duodenal ulcers, chronic appendicitis, cholecystitis and many other internal pathologic conditions. Also, it should not be overlooked that the reverse is true, that impulses originating in the higher centers may be carried over the same route to the internal organs; for instance, a hair or a fly in ones food can cause vomiting before the food is even tasted, or indigestion and other disturbances may be due to mental agitation alone. Examples of such phenomena occur in the experiences of everyone.

It should not be forgotten that so-called occult forms of epigastric hernia are not infrequent and should be suspected when tender spots are found, as emphasized by Napalkow. In such instances small bunches of fat are caught in openings in the posterior layer of the linea alba without protrusion through the anterior, thus escaping detection by palpation. The symptoms, however, may be just as pronounced as those due to the more obvious variety, and the treatment should be the same—excision of the bunch of fat, closure of the hernial opening, inspection of the relations of the hepatico-umbilical ligament and exploratory laparotomy if at all indicated by x-ray or otherwise. It also is interesting to note that the manifestations of these occult hernias may easily be mistaken for those of chronic appendicitis or cholecystitis.

A case recently encountered in my service at the Colorado General Hospital illustrates some of the above statements:—A thin, nervous laboring-man, about sixty years of age, was almost completely disabled by severe superficial pains in the mid-epigastric region, from which they radiated in one direction or another, but never internally. There were no gastrointestinal disturbances. and an x-ray examination revealed nothing except a slight irregularity of the bulb, to which but slight significance was attached. Palpation revealed a very tender epigastric hernia the size of the end of a finger which was assumed to be the sole cause of the distress.

At operation, when the abdomen was opened, entirely as a matter of routine, the mass of herniated fat was seen to originate from the hepatico-umbilical ligament, and upon further exploration an indurated ulcer as large as a fingernail was found upon the anterior surface of the first portion of the duodenum. In addition to removal of the protruding fat and closure of the opening in the linea alba, a gastro-enterostomy was done, the patient making an uneventful recovery with relief of his disquieting symptoms. It will be observed that without the routine laparotomy, for which there seemed to be but little indication, the final result would have been, to say the least, unsatisfactory.

More recently I have observed two other instances in which epigastric hernias connected with the hepatico-duodenal ligament were accompanied with duodenal ulcers, which have served to impress upon me the importance of always taking this complication into consideration.

Resumé: Epigastric hernias, which may be either apparent or "occult," may give rise to local, internal or general symptoms, or a combination of all of these. The internal symptoms are usually gastric and may be accounted for by involvement of the fatty tissues of the hepatico-umbilical ligament in the hernia, with pinching and irritation of sympathetic and parasympathetic fibers contained within them. This irritation is passed on to the solar plexus and from there to the stomach and duodenum, resulting in pyloric or other forms of spasm, and in alternations in secretion and motility and possibly gastric or duodenal ulceration.

Hence it is perhaps best, even when no internal pathology is suspected, or even demonstrable with the x-ray, to explore at least the hepatico-umbilical ligament and perhaps the stomach and duodenum as well.

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INDICATIONS FOR INTESTINAL DRAINAGE—ENTEROSTOMY AND COLOSTOMY—TECHNIQUE OF OPERATION

REPORT OF 134 CASES

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Enterostomy has only recently received the attention the procedure deserves. In spite of the serious objections raised by numerous authorities in high positions, the great mass of favorable literature of late has produced more enthusiasm in the medical world in favor of enterostomy. A long list of articles presenting the views of many operators, too numerous to mention in this paper, is available. Two men, outstanding pioneers in this work, should be given special credit. Victor Bonney(1) in 1910 pointed out that the fatal results in intestinal obstruction were due to toxic absorption from the upper intestinal tract brought about by an acute ascending infection by organisms of the lower intestine in a state of exalted virulence and activity. He further pointed out that in these cases the bowel may be divided into three segments, each of which is in a different condition: (1) a collapsed portion, (2) a portion above it much distended with gas, but containing no fluid matter. and, (3) a portion above that distended with gas and fluid matter, the fluid being more or less feculent in character and identical with that vomited.

He showed that in these cases it was proper to open the upper fluid containing segment in order to drain the reservoir of toxicity, and useless to open the middle gas condition segment. In 1916(2) he says: "During the time that has elapsed, by confidence in the correctness of the views then (1910) expressed has been strengthened, and I hold strongly that in all cases of paralytic intestinal obstruction, (whether primary or secondary to an organic obstruction or to peritonitis) when advanced to a state of fecal, or short of fecal, intestinal vomiting, should be treated by jejunostomy."

Bonney's technique was entirely too complicated for the rank and file of operators, and could never have become popular. It consisted of suture of the bowel to the skin through a separate incision, opening the bowel and then ten days or two weeks later, dissecting out the fistula, with resection of the bowel, and end to end anastomosis. He reported five cases with obstruction and fecal vomiting, with five recoveries. McKinnon in 1917(3) advocated a jejunostomy (complemental jejunostomy) for bowel obstruction by means of a catheter like tube, which, when removed required no secondary major operation. Dr. McKinnon, a friend and neighbor, advised me of his impressions, and as a result, late in 1916, a year prior to the publication of his paper, I performed my first deliberate catheter jejunostomy in an almost moribund case of general peritonitis, and was surprised and delighted to observe the prompt response and early recovery of the patient. Practically all of my early enterostomies were performed several days after the primary operation. I fear this is too often the practice of surgeons today.

About 1924 I began what I choose to call prophylactic jejunostomy with such marked satisfactory convalescence of my patients, that today all abdominal operations in which there is evidence of spreading peritonitis or marked soiling of the peritoneum from escaped visceral contents, even without distention of the bowel, are subjected to a high jejunostomy. One is struck by the smooth postoperative convalescence, no gas pains, no distension of any character, no vomiting. Were it not for the extra hazard of an intestinal drain, all abdominal operations would have smoother sailing if enterostomy was done at the time of the primary operation.

That Bonney's conception of the term "Paralytic obstruction" was erroneous, is evident. When the whole bowel is paralyzed it is better, as a rule, to call the undertaker and save the catheter. Paralytic ileus is a much abused term and is often used as a catch-all for ignorance of the true condition. Before calling the undertaker however, it might be well trying neocaine spinal anaesthesia.

The discussion of Beuren and Smith(4) of New York, in which they attempt to show a higher mortality with enterostomy than without, is interesting, but, after a careful analysis of their findings, it becomes evident that they have been led astray by estimating the time element alone. In order to determine the relative merits of a procedure, at least to the practical abdominal surgeon, not only the time element, but more *particularly the condition of the individual patient* at time of operation must be known. An acute case may be early at 62 hours, or too late at 24 hours. In most clinics the enterostomies for peritonitis obstruction are performed only in very late postoperative conditions. The word late here does not indicate the number of hours from the inception of the symptoms, but rather to the desperate condition of the patient—a pre-exit procedure in other words.

The experimental work on dogs conducted by Orr and Haden a few years ago, might tend to cast some doubt on the value of enterestomy. The writer was, therefore, more than pleased a short time ago to read a report of five enterostomies for general peritonitis obstructions by Orr(5) in which he concluded, in part, (3) "In selected cases of peritonitis of the lower part of the abdomen, enterostomy is life saving", and (4) "In doubtful cases of peritonitis, enterostomy should be used. If proper technique is used, it can *do no harm* and may do some good." This delightful admission will go far to mend the enterostomy depression. Orr's recoveries "drained freely" while the fatal cases did not. Had Orr drained higher up, where, according to Bonney, the liquid or fluid poison is held, a higher recovery list might have been delivered. On the other hand, all the patients would now be beyond recall, had no tube been inserted.

Having engaged in the practice of surgery exclusively for thirty-two long years, and having tested various procedures in all lines of the art during all this time, the results of this and that technique, I am firmly convinced that no procedure has added more to the saving of life in my hands than enterostomy. Of course, one should not wait for fecal vomiting, or even near fecal vomiting in postoperative cases, or any other obstruction condition. If there be any originality in my efforts it is along the line of prophylaxis. I believe I was the first to advocate jejunostomy or enterostomy performed during the primary operation when there is the slightest evidence or anticipation of general peritoneal involvement developing after the operation. Drainage of all intussusception cases above the affected segment in every case, early or late, too, is, I believe, original with the writer.

By prophylactic jejunostomy most of the surgeon's worries are ended, insofar as postoperative enterostomy is concerned, and, as Orr says, "It will do no harm and may do good." I defy anyone's ability to confine a partial septic peritonitis within the bounds of the confines observed at time of operation. What today may be an ileo-caecal and lower abdominal peritonitis, tomorrow may be a fatal generalized infection. This is self-evident and hardly worthy of discussion. That peritonitis alone may kill, there can be no doubt. Certain virulent fulminating types of appendicitis may kill no matter what procedure is carried out. On the other hand, there is much evidence introduced to prove that many cases of general septic peritonitis have been saved by removal of the source of infection and by draining the upper small bowel only, and without any drainage of the peritoneal cavity. A number of my recovered cases, below reported. were suffering from acute diffuse general peritonitis in which high jejunostomy was performed—without any drainage whatever in the peritoneal cavity. It stands to reason that the peritoneum has not the same chance, once infected, to overcome the insult of thirty or forty feet of intestines. themselves covered by the same membrane, not only stretched and ballooned and practically functionless, but also containing stagnant poison adding to the tragedy.

Relief of the distension alone may aid the peritoneum to weather the storm. It must be borne in mind that while the peritoneum may alone and unaided by drainage, overcome the infection, the abdominal wall will surely fall prey unless some form of drainage is established to prevent a wide destruction of muscle, fascia, fat and even skin.

INDICATIONS FOR ENTEROSTOMY

1. Acute general peritonitis—high jejunostomy.
2. Anticipated general peritonitis—prophylactic jejunostomy.
3. Gunshot and other severe trauma—jejunostomy or enterostomy. (The perforation of a small gunshot may be used to receive catheter).
4. Obstruction, small gut—high jejunostomy with catheter.
5. Obstruction, large gut, early—cecostomy with small colon tube.
6. Obstruction, large gut, late—cecostomy with small colon tube and jejunostomy, with catheter.
7. All resections, not acute—drain short distance above anastomosis.
8. All intussusception cases—drain above affected segment, with catheter.

Since my article read at the meeting⁽⁶⁾ of the American Medical Association, in Washington, my faith in enterostomy has been strengthened and I have few changes to advocate at this time. Spinal anaesthesia has certainly lowered the mortarity and lessened the trauma in explorations of the acute abdomen.

The importance of gaining an extremely high segment for the jejunostomy is not necessary. I am still of the opinion, however, that high jejunostomy is preferable to low jejunostomy or ileostomy in the peritonitis cases.

MY TECHNIQUE(7)

The Witzel gasterostomy method of holding the drainage tubes in place is unnecessary, is time consuming and should be discarded for the simple purse string sutures. The technique is extremely important, however. I have seen several most disagreeable permanent fistulae. the result of delivering the catheter through the primary incision. When the enterostomy is done at time of primary operation, before or after the primary focus of infection is attacked, the freshly gloved hand is passed upwards and a high loop of jejunum is delivered and packed about with gauze wrung out of hot normal salt solution. An intestinal needle threaded with plain O catgut is passed through all coats of the bowel—three stabs of the needle are sufficient. I wish to stress the advantage of plain O catgut for the first holding suture for the reason that quick absorption will permit of easy and safe removal of catheter in from four to five days. The needle is then passed through a 16 or 18 rubber catheter not less than 4 inches from the end. the distal end is hermetically sealed. Next, with a pointed knife a small stab is made between sutures and the catheter inserted, and catgut tied. Next, two purse string chronic O gut sutures are placed not more than a fourth of an inch distant from the catheter. Each suture is then tied while the assistant pushes the catheter into the bowel. If possible the omentum is found, perforated, and the catheter passed through it (Chas. Mayo technique). Then a small stab, hardly the diameter of the catheter, is made at a convenient point to the left and a little above the umbilicus. A long sharp forcep then perforates the peritoneum. the end of the catheter is grasped and delivered through the skin opening. The intestinal catheter must never be delivered to the surface through the primary incision, but always through a small stab wound well away from the field of operation. The catheter should be hermetically sealed at its distal extremity. After it has been brought out through the stab wound a clamp is now placed on the catheter close to the skin, temporarily holding it in position, thus bringing the omentum and bowel in close contact with the parietal peritoneum. The original wound is closed with or without drainage of the peritoneal cavity, but never fail to drain the abdominal wall in the presence of infection. The clamp is removed and its function replaced by a fine silkworm gut suture, passed through the skin near the catheter and wound several times around the catheter and tied. When the operation is completed the sealed end is cut off and the catheter connected with the drainage receptacle which is fastened to the side frame of the bed or resting on the floor. The wound is dressed in such a manner as to seal off possible contamination from the catheter.

In case a secondary enterostomy is desired—a small incision is made above and to the left of the umbilicus, a high loop of jejunum selected and the procedure carried out as before. Local anaesthesia should be employed.

In case of colon obstruction, I employ a regular rectal tube (cecostomy) with the same technique. It is surprising to see the beautiful artificial anus established after sigmoidostomy when inoperable carcinoma of the sigmoid or rectum is encountered.

The greatest danger after primary recoveries from diffuse general peritonitis is secondary bowel obstruction, and one should always be on guard the moment symptoms arise. It has been my misfortune to have seen several of these cases which happened within a week or ten days after a normal convalescence and on re-opening the cavity have been astonished to find the results of the adhesive peritonitis in many parts of the abdominal cavity.

If amniotic preparations now on the market prove to be of value, I know of no condition more favorable for extensive trials than in the class of cases under discussion.

Catheters should be inspected. In one of our deaths, where there was no drainage from the tube, it was found after death that the catheter had no lumen in one part but instead was solid rubber. Another fatal case the tube had extended into the bowel only about two inches; at autopsy, the tip was found firmly fixed into the opposite wall of the bowel completely obstructing the outlet. After this experience we always passed the tube at least four inches into the bowel lumen.

AFTER CARE

Hot water by mouth, with 1500 cc. normal salt solution under skin may be given for several days; glucose also may be given in normal salt solution intravenously as indicated. Beginning on the third day, orange juice and soups are given by mouth. Soon after operation normal salt solution, and later beef tea may be injected through the catheter into the bowel. Nutrient enemata may be given on the fifth day if bowels have acted freely; then the catheter may be removed. With one exception no distressing fistulae occurred. Seldom more than a few drops of fecal material escape after removal of the catheter. In the one persistent case we stuffed the opening with chewing gum and LO!—the fistula immediately healed. (I later treated several persistent fistulae coming to me from other sources with marked relief, if not complete success, by the gum method.)

And finally I wish to report one hundred thirty-four enterostomies.

I have attempted to classify the cases as follows:

In Class 1. I place all the cases presenting late manifestations of a severe peritonitis where at operation one finds the entire cavity involved, and in which jejunostomy was performed at the primary opation.

Class 2. All secondary enterostomies.

Class 3. Mechanical obstructions—with or without peritonitis.

Class 4. Miscellaneous.

Class 5. Desperate cases where at operation much trauma and soiling had taken place.

The number reported does not include the ordinary prophylactic enterostomies performed, but only the severe types of cases in which a very high mortality rate may be expected. Many of my prophylactic enterostomies no doubt might well do without it, but the convalescence is so delightful to patient and surgeon and the personal relief of knowing one may not be required to perform a secondary operation, urges me on to continue the practice. In addition I am satisfied, when more or less soiling of the peritoneum from early rupture of the appendix, for instance, is present, an occasional death from general infection may be avoided by draining the intestine.

There were 67 cases of general peritonitis—13 deaths. The primary focus was most often in the appendix, there were also cases of perforated duodenal and gastric ulcers, acute pancreatitis, intestinal ruptures from trauma, etc. There were 12 miscellaneous cases, with no deaths; 7 secondary jejunostomies with 4 deaths; 48 obstruction of the bowels, including practically all types, with 14 deaths.

The field covered in these 134 operations, with added jejunostomies, was that of general abdominal surgery—chiefly surgery of the stomach, and surgery of the large and small intestine. The complete records of all cases are in the files of the Jennie Edmundson Memorial Hospital, Council Bluffs, Iowa. They cover the period from 1920 to 1931 inclusive.

All my case records prior to the war were lost or destroyed, also those in the lean year following. During my service on the Mexican border, while surgeon in chief of Base Hospital No. 3, I performed several jejunostomies, but not having the records they are not included in the list of 134 outlined.

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SURGICAL DYNAMICS OF ALIMENTATION

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Raymond Pearl says that in all fields of intellectual activity it is given to but few men to be able and willing to think independently and originally. Doctor John Edward Summers exemplifies well the independent and original thinker, and as his maturity in surgery increases, he seems to lose none of those characteristics. Mastery in all physical and mental endeavor requires a good mental soil, adaptability, an abundance of experience and ambition. It takes, however, a large part of a student's life to become a master in surgery, requiring at least twenty years of active practice accompanied by independent and constructive thinking. The older the student in surgery becomes the more valuable to mankind is he because his mind is used more effectively and more frequently than are his hands. What a greater blessing surgery could bestow if all operative procedures, in lieu of and during their execution, were placed before our masters for their approval. More than ever before, immature surgery is forcing its way until some day in the near future some such controlling hand must come. We now need these masters more than ever before and what a pity that the younger students of surgery and our hospitals are so organized that these guiding minds are not in closer contact with us. What a tremendous loss and how difficult to replace.

Why is it that all students of medicine receive their only publicly recognized credentials long before the time when they really deserve it? The term "graduate in medicine" is harmful because there never can be such and, furthermore, the weight of the present-day diploma is, to most students, a hindrance and a burden. Would it not be better if the diploma, at the time of graduation, attached an insignia indicating that they were in their most inexperienced era and should be recognized only by an M. B., Bachelor of Medicine? And would it not be better for all concerned if at the end of ten years of clinical experience, another degree could be obtained, but for meritorious work only—such as an M. D., Doctor of Medicine? From then on a particular effort could be made to obtain a special degree at the end of another ten years—such as an M. S., Master of Surgery. This would accomplish numerous things, foremost among which would be the opportunity of the public to distinguish the efficient from the inefficient students of medicine, a privilege they never have enjoyed. What a stimulant to the ambitious student and even if too few become masters, only benefit to all could come. In this present-day social and economic revolution, there is room for an educational change whereby professional efficiency could be more readily recognized by the public. When an effective lay-professional contact can be made, the public will regulate the practice of therapeutics. The profession never can accomplish much in regulation; it is not constructed for such activities and, furthermore, it detests force of such a nature. We have two large medical organizations attempting some such efforts but they are, unfortunately, greatly in need of assistance, courage and originality. The things for which Doctor Summers has solidly stood prompted this honorary number of *The Nebraska State Medical Journal* as well as the above expression of a desire for ways and means whereby our most experienced and worthy students can receive their just deserts—not that they especially seek or need them but because, as a matter of worthy differentiation, they should be so designated.

DYNAMICS OF ALIMENTATION

A consideration of the dynamics of alimentation involves a study of the correlated function of the entire alimentary tract. First to surgery and then to Roentgen rays and experimental physiology must we acknowledge the advances in our progress in alimentation during the past twenty years. What fairy tales were told to us by our old books on diseases of the stomach and intestines. After surgery began looking through the abdominal wall and at first, unknowingly, cured patients of gastric distress by removing the appendix, the gallbladder and gallstones, the self-styled stomach specialist began to disappear. But no criticism of him—he never had the living pathology and proper Roentgen shadows at his disposal. He was educated at the necropsy where the battle ended without an education at the operating table where the battle was in progress; and he disappeared voluntarily by grasping for principles pertaining to intra- and extra-alimentary pathological structure and function. Knowingly or unknowingly, he became more of a general physician, soon learning that the alimentary tube is a great barometer which registers symptoms and signs for numerous abnormalities outside of as well as inside of itself. In time he will become a valuable surgical diagnostician as he allows surgery to teach him. When the physician and the surgeon learn to speak the same diagnostic and therapeutic language. the spoils of honor and other compensations will more equally be divided.

Alimentation is the most primitive as well as the greatest force in all life, but still remains the greatest mystery. The main reason for our successful surgery upon it is due to clinical judgment in a great part. Intra-alimentary chemistry as well as the allied chemistry of the blood, particularly shown by Haden and Orr and in combination with Roentgen rays, are valuable allies we do admit. The phylogenesis of alimentation should be given primary consideration in order to obtain some sort of an idea of the chronological development of each segment of the tract.

There must have been a primitive digestive viscus with a single opening for entrance and exit which, at a later date, became separated into two distinct orifices. This primitive tract was quite likely alkaline in reaction, owing to its vital function. The digestive juices secreted by its mucosa and by its later developed diverticuli—liver and pancreas—naturally, therefore, required an alkaline medium. When the organism assumed roles in addition to constant alimentation, storage segments for products of assimilation and for elimination were developed in the shape of the stomach and the colon. Since chemical structure is constantly changing and chemical function is constantly decreasing, an alkaline medium for these two later acquired segments—stomach and colon—would be far less dynamic than an acid; hence, the acid stomach and the acid coln. Their acid nature. in addition to their being an alternating digestive medium, is also an inhibitor of bacterial development, which is more likely to occur in stagnating areas. The first digestors in the vertebrates are the teeth, mechanical merely in function, and in order to preserve their hard structure of calcium salts, an alkaline medium became necessary. Ptyalin in the saliva is of secondary importance, its alkaline digestion accomplishing very little.

STRUCTURE OF ALIMENTATION

The phrase "structure of alimentation" is ambiguous in one sense and specific in another. Anatomical physiology is synonomous with physiological anatomy. The structure of the alimentary tract, however. is limited to the digestive apparatus but it cannot work alone and be a source of energy to the body. Accessory structures are necessary, such as the nervous system, the endocrine system, the blood and lymph circulations, the eliminating systems and the water balancing system. Neutrality regulation through extra- and intra-alimentary exchanges of salts, particularly those of the bile and sodium chloride, are all essential factors in assisting the most essential source of life—alimentation. In describing, therefore, the structure of alimentation, one must consider not only the mouth, oesophagus, stomach, small intestine and its diverticulated liver and pancreas, appendix and colon but also the autonomic and sensory nervous systems; blood and lymph systems; the water balancing systems—skin, lungs and kidneys; acid-alkali balancing systems; and the mechanisms involved in the exchange of vital intra- and extra-alimentary substances such as salts, hormones et cetera (unknown).

The alimentary tract is closely allied to the skin, lungs and ventricles of the brain. The ectoderm and entoderm are most closely related and give rise respectively to all of the external and most of the internal epithelium. The alimentary tract and lungs are derived from the entoderm, while the skin and ventricles of the brain are from the ectoderm. The choroid plexus may be likened to the sweat glands of the skin, both being filtration structures of epithelial origin. The cerebro-spinal fluid may be considered as internal perspiration.

The mucous membrane of the alimentary tract contains endless millions of glands for secretion and villi in the small intestine for absorption. From it all of the attached ductal glands originate. e. g. the salivary, the liver, the pancreas and the submucosal duodenal glands. The upper mucous membrane secretes far more than it absorbs; the lower, from the ascending colon onward, absorbs far more than it secretes.

The muscularis of the alimentary tract begins and ends with voluntary sphincteric musculature, all intermediate sphincteric action being of involuntary control. From the origin of the oesophagus to the anus, the muscularis is in two laminated layers, circular and longitudinal. Sphincteric action determines motility, the pylorus controlling the first motile segment of six hours duration and around 75 cm. in length from the mouth to the end of the stomach. The sphincteric action of the ascending colon, aided by its reverse peristalsis, controls the second motile segment of six hours duration but around 660 cm. in length from the stomach to the hepatic flexure. The sphincteric action of the splenic flexure and first portion of the descending colon controls the third motile segment of six hours duration and around 45 cm. in length. The descending colon is more of a duct and practically always empty. The recto-sigmoid juncture acts as a sphincter and controls the fourth motile segment of twelve hours duration and around 30 cm. in length. The function of the rectum may or may not be an additional reservoir for dehydrated feces and if so, is controlled by the internal anal sphincter. The alimentary tract, therefore, is segmental in motile as well as in chemical activity, retaining therein its contents for varying lengths of time.

The nerve supply of the alimentary tract is unique, consisting of motor, secretory and sensory elements. Its sensory innervation is odd in that it registers sensation only during extreme spasms of the musculature and during traction on the mesentery. The autonomic pre- and post-ganglionic nervous system controls the secretory and muscular activities. Plexuses, intermuscular and submucous (Auerbach and Meissner), are accessories apparently to the sympathetic nerve tracks. Nodulations of these plexuses, known as Keith's nodes, are said to be found in sphincteric segments such as the opening into and out of the stomach, ileo-cecal valve and recto-sigmoid juncture, all regulators of motile segments.

The blood supply is capable of an enormous increase according to function. It is interesting to note that the venous drainage of the gastro-intestinal segment passes through one of its diverticuli—the liver—for further refinement. The anastomosis of the portal with the general venous circulation is of embryonic duration and of no little assistance during permanent and temporary portal stream obstruction. These anastomoses may be functional decompressors during a temporary over-load in the portal stream or within the hepatic structure. The lymph drainage is individualistic in that only in the small intestine does it assume a double role by also absorbing a considerable amount of fat, which nature apparently prefers to keep away from the liver. Lymphoid follicles are numerous throughout the distal half of the mucosa of the small intestine, draining into the lacteals or lymph vessels. The function of these follicles is unknown; they may be remnants of earlier types of white blood circulation.

FUNCTION OF THE ALIMENTARY TRACT

The function of the alimentary tract includes chemical and motile segmental relationships. The motile segments have been just previously described and correspond roughly to the chemical. It seems reasonable to assume that each segment prepares the contents of the tract for chemical as well as for motile activities in the segments caudad. Quite likely the products from the gastric segment would be in no chemical or physical condition for normal activity in the colonic segment. It seems apparent that there is an orderly arrangement from the cephalic to the caudad extremities of segmental chemical and motile activities, chronologically arranged. If this process should become reversed as in intestinal obstruction, we would have a caudad emptying into a cephalic segment, the protein contents of which are then foreign and when absorbed, act upon the central nervous system in a manner similar to the parenteral hypodermic injections of foreign proteins (protein shock). The chemical function of the alimentary tract also consists of an orderly arrangement of alkaline and acid segments into which specifically active digestive juices are secreted. As previously stated, the dynamics of the tract become more forceful when its segments alternate in alkalinity and acidity.

The motor activities have, in part, been described and, as stated, consist of more or less distinct sphincteric retention segments. The oesophagus, the first portion of the duodenum and the descending colon are more or less ductal in function; normally they are empty unless rapidly transmitting their contents. It takes the stomach and transverse colon as long to transmit their contents as the small intestine which is ten times greater in length.

From the standpoint of surgery at least, the motile function of the alimentary tract is of primary importance; the chemical being secondary because a failure of transmission of the tract's contents is of far more serious consequence than the failure of its chemical activities.

THE BALANCING MECHANISM

The balancing mechanism of the alimentary tract is as interesting and complicated as it is essential. It may be considered under four distinct functions: secretion, absorption, re-absorption and intersystemic circulations.

I. Secretion.

Into the lumen of the alimentary tract the mouth, stomach, small intestine and its diverticuli—liver and pancreas—secrete alkalies, acids, salts, digestive juices, waste products from the intestine, reticulo-endothelial system and the liver; water naturally being the medium and amounting to at least 2000 to 3000 cc. daily. During these processes of secretion, the economy is correspondingly dehydrated. The secretion or osmosis of gases into the alimentary tract may occur to a greater extent than we realize.

II. Absorption.

Under the subject of absorption or nutrition we must consider assimilation and elimination. Essential parts of all ingested foods, chemicals, water et cetera, in addition to water, salts, hormones et cetera secreted into it, are absorbed through the alimentary tract. Residues, non-essential chemicals, small amounts of water and carbon dioxide are eliminated by the alimentary tract. Certain elements which are of no further use to the economy, such as old red blood cells, bile salts and pigments, are also eliminated by the alimentary tract. There are undoubtedly additional substances at present unknown. The role of elimination, although far less understood than assimilation, is extremely important but too poorly understood.

III. Re-absorption.

There are numerous products re-absorbed from the tract into the economy and which originated therein. These include water, sodium chloride and other salts, acids and alkalies, stimulants to the pancreas and liver and secretory products from the liver, pancreas and intestinal epithelium. At least a portion of the hydrochloric acid from the stomach goes back as sodium chloride and perhaps some of the unknown products of the spleen are re-absorbed. If carbon dioxide is excreted into the upper intestine, it undoubtedly is re-absorbed as such or in combination in the lower. The circle of water and sodium chloride is extremely important and deserved primary consideration in all forms of intestinal obstruction.

IV. Intersystemic Circulations.

A number of circles of intra-alimentary and extra-alimentary products occur, involving the processes of secretion, absorption and re-absorption. The gastro-intestinal tract sends stimulants to the pancreas, liver and perhaps other tissues, receiving in return metabolic products from the tissues stimulated, and many of these hormones, enzymes, salts et cetera are re-absorbed. The economy places normal substances into the gastro-intestinal tract for elimination or temporary storage, such as water, salts, acids and alkalies. These to and fro exchanges, or whatever you may call them, are alimentary tract regulators in that they hydrate, dehydrate, stimulate, detoxify, lessen or raise the salt contents of the blood and also raise or lower the acid-alkali balancing mechanism.

The processes of secretion, re-absorption, absorption and intersystemic circulations are balancing mechanisms of tremendous importance in normal and abnormal alimentary tract conditions. The restoration and elimination of water, glandular stimulants, by-products, salts, acids, bases et cetera are constantly balancing the to and fro exchange into the alimentary tract and into the body economy. This alimentary barometer or regulator is adaptable to many changes but is mostly disturbed when an organic obstruction occurs.

Some may ask why we should consider all of these anatomical and physiological conditions when empirical clinical studies to them are more interesting. In no other part of the body is a knowledge of chemical and physical roles more important than in surgical considerations of the alimentary tract. The greatly lowered surgical mortality has come, not through earlier diagnosis and operative surgery—both having remained the same in sluggish progress—but through a better knowledge of the abnormal blood and tissue chemistry produced and how to overcome it. The balancing mechanism of the gastro-intestinal tract should be a clinical concept even if it involves studies well beyond.

ABNORMALITIES OF ALIMENTATION

All abnormalities of the alimentary tract may be classified under three divisions: chemical, motor and balancing functions.

- I. Chemical mechanism.
  - A. Hypersecretion
  - B. Hyposecretion
  - C. Dys-secretion
- II. Motor mechanism.
  - A. Hypermotility
    - 1. Chemical origin
    - 2. Motor origin
  - B. Hypomotility
    - 1. Spastic obstruction
    - 2. Organic obstruction
    - 3. Paralysis of musculature (ileus)
      - a. Chemical
      - b. Neurogenic
- III. Balancing Mechanism
  - A. Secretion from the economy into the alimentary tract.
    - 1. Hypo
    - 2. Hyper
    - 3. Dys
  - B. Absorption from the alimentary tract into the body economy.
    - 1. Hypo
    - 2. Hyper
    - 3. Dys

Every clinical or pre-clinical condition may be placed under any one or more of the above divisions and conveniently studied therefrom. I have used this formula for teaching during the past ten years in the Department of Medicine of the University of Nebraska, obtaining the utmost satisfaction for clarity among the junior and senior students. All diseased conditions of a functional or organic nature are quickly placed within this bracket and studied accordingly, realizing that Divisions I, II and III are always more or less intermingled, particularly when any abnormality of any dimension occurs.

CLINICAL CONSIDERATIONS OF THE ALIMENTARY TRACT

Misnomers are far too common in medicine as exemplified by the terms: clinicians, internists, diagnosticians, operators, specialists, surgical anatomy, *et cetera*. There is no such thing as surgical anatomy any more than there is a medical anatomy. There are, however, such conditions as clinical anatomy and operative anatomy, the former of equal interest to both the physician and the surgeon. All surgeons should have a constant association with a physician whose gyroscopic powers are due to a large amount of surgical sense and acumen which he has obtained at the side of an operating table conducted by a surgeon. Such trained surgical physicians are coming in greater numbers in the near future and they will add greatly to the success of manual therapeutics. Group work must come because too few surgeons are endowed with that rare sense of accurate but gentle therapeutic judgment and manipulation. Most of us need the constant association of surgically-sensed physicians who will recognize the likely presence of intestinal obstruction of a spastic or organic nature and who would rather have their patients explored too early rather than too late. One of the most pertinent statements which that great master of surgery, John B. Deaver, ever uttered indicated that it was better for the patient if the surgeon, after opening the abdomen, saw too little rather than too much. All clinical considerations of the alimentary tract should consist of independent and combined studies of the chemical, motor and balancing mechanisms of the tract in addition to the condition of the body in general. This naturally requires the association of a physician, Roentgenologist and physiological chemist with a surgeon who will correlate all of his counsel before any operative therapeutics are applied.

SURGERY OF THE ALIMENTARY TRACT

The most successful surgery of the alimentary tract consists of early recognition of lesions which can be relieved only by operative intervention and supplemented by overcoming any existing dehydration, intoxication and losses to the economy of essential substances such as salts, carbohydrates and proteins. The clinical work of Haden, Orr and others stands as fundamentally sound and useful as the early recognition and proper operative intervention for lesions of the alimentary tract in which the balancing mechanism is upset to the extent that it would soon prove fatal if not restored. All surgery of the alimentary tract should strive (1) toward a differentiation between functional and organic lesions, (2) toward a restoration, after resection or drainage, of as near normal chemical and motor segmentation as it is possible to obtain and (3) toward a restoration to normal of an existing abnormal balancing mechanism.

The tract is so long, so adaptable toward individual surgical fancies and fads and so tolerant toward unsound and unsafe operative surgery that every decade will see new methods advocated which will be in vogue only until they annihilate themselves. How ridiculously crude we must acknowledge ourselves to be in the treatment, for example, of chronic duodenal ulcer. It is true that the duodenum is the most difficult segment of the gastro-intestinal tract upon which to operate, owing to its immobility, situ and active chemistry therein. Some of the leading continental surgeons advocate resecting a normal stomach in order to relieve a patient of a duodenal ulcer and British and American surgeons still adhere to a proximal lateral anti- or iso-peristaltic anastomosis with its undesirable but small percentage of secondarily occurring anastomosis ulcers. Judd's plastics on the duodenum are ideal, and are the most desirable methods when they can be performed. Surgery of the entire alimentary tract, excepting the gallbladder and appendix, still carries with it too many anxieties and failures following emergencies and elective resections and anastomoses owing, principally, to an insufficent knowledge of the dynamics of alimentation. End to end restorations, accurate coaptations with sutures, prevention of ischemia and obstructions are the main desires of surgery of the alimentary tract. Emergency procedures in obstructions are often dangerous, particularly when the general balancing mechanism of the tract is interfered with. When proper surgical chemistry precedes and follows all surgical maneuvers, the operative mortality rate will be greatly reduced and when operations are permitted earlier and improved judgment applied, the high mortality rates will decline to a permissable level.

After most operations upon the sensitive alimentary tract, what surgeons have not felt that even the best of surgery, no matter where or when applied, is always ostentatious, destructive, deceptive, uncertain, dangerous and only too poorly understood. Since all surgery is nothing more than a substitution of one abnormality for another, in addition to its being as great a responsibility as any vocation of man, we are compelled to admit that to have lived successfully and constructively through more than thirty years of an active surgical career indicates a stamina in mind and body which only men of Doctor John Edwards Summers' type represent.

"The knowledge of man is as the waters, some descending from above, and some springing from beneath; the one informed by the light of Nature, the other inspired by divine revelation. The light of Nature consisteth in the notions of the mind and the reports of the senses; for as for knowledge which man receiveth by teaching, it is cumulative and original; as in a water that besides his own spring-head is fed with other springs and streams. So then, according to these two differing illuminations or originals, knowledge is first of all divided into divinity and philosophy." —The Advancement of Learning, Francis Bacon.

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MORE REASONS WHY YOUR MEMBERSHIP SHOULD REMAIN INTACT

We publish the following appeal from the *New York State Journal of Medicine* so the profession may know that larger states than Nebraska feel the need of reminding members and others of their duties to organized medicine:

"Among the greatest advances in the practice of medicine in recent years has been the growth of the spirit of cooperation among doctors, among their patients, and between the medical profession and the public. The individual doctor can do comparatively little in educating the individual patient, for his instruction begins only when sickness is already present. Nor can the individual patient and family correct their defects of ignorance or inability to cooperate after disease has come upon them. No argument is needed to prove the necessity of collective action of individual doctors and of concerted measures by the people.

"Physicians throughout the civilized world have their medical societies which represent the standards of individual doctors. The fundamental organization is the county medical society to which all physicians are eligible, except that small minority who are so intensely individualistic by temperament that they cannot live in peace with their fellow doctors. There is a very real sense in which the county society practices medicine. Its officers and committees promote the establishment of hospitals and public health nursing, and advise the authorities regarding their conduct in public health matters. They also carry on campaigns for educating the people so that they will be ready to cooperaate with the family doctor when sickness comes or is threatened. The county societies set the standard of medical practice and of the relations of doctors to the public."

THE POSTGRADUATE COURSE OF THE COLLEGE OF SURGEONS

Possibly two hundred surgeons attended the annual meeting of the Nebraska Section, American College of Surgeons at Omaha, February 23 and 24. The program committee had visioned a postgraduate course. How well the committee succeeded is attested by the unanimous expression of approval of the program. All the speakers are teachers and research workers and their messages brought authority. The program was carried out with the regularity of clockwork and no time was given to discussion, which, while, often a great help, is also time-consuming and at times tantalizing to those who have charge of the program and attempt to carry on with some degree of regularity of schedule. The screen, moving pictures and even talkies have added enormously to teaching within recent years and were here used to the fullest. Three projecting machines were in the auditorium for use at all times. Manifestly the entire program cannot be discussed here but an idea of the nature of the work presented may be gathered from a notation of the matter which follows:

Roentgen analysis of intestinal obstruction; occlusive arterial disease involving the extremities; surgery of the ocular appendages and related structures; the use of pedicled flaps and skin grafts in reconstructive surgery of the head and neck; carcinoma of the larynx; the physiology of the spleen; regeneration of the sympathetic nervous system; rational treatment of acute peritonitis; the pancreatic juice as an etiological factor in gallbladder disease; the physiology of the biliary tract; surgery of biliary disease; congenital anomalies of the kidneys; the prostatic problem; surgical treatment of arthritis; diverticulum of the esophagus; problems of industrial medicine and traumatic surgery.

Dr. Arthur Steindler, Iowa City, gave an orthopedic clinic; Dr. Malcolm T. MacEachron, Associate Director American College of Surgeons, gave an illustrated lecture on "Medicine and Hospitals in the Antipodes"—Australia and New Zealand. Motion pictures on hernia were also presented.

Hospital conferences were held covering both days, participated in by some twenty Omaha and Lincoln surgeons, supervising nurses and other hospital officials, under the direction of Dr. MacEachron.

The presidential address of Dr. Earle G. Johnson of Grand Island was a masterly analysis of our problems and was highly complimented by the members of the College and by Dr. F. A. Besley, Chicago, Treasurer and sole executive representative of the American College of Surgeons, present.

Dr. C. C. Allenberger, Columbus, was elected president-elect of the Section and Dr. William Shearer, Omaha, was reelected secretary-treasurer.

Altogether. this was easily the most successful meeting of the Nebraska Section, ever held.

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS

The annual Congress on Medical Education, Medical Licensure, and Hospitals, held under the auspices of the American Medical Association, met in Chicago on the week beginning February 15th. The Federation of State Medical Boards, The American Conference on Hospital Service, held their annual meeting in affiliation with the A. M. A. meeting. For many years there was a Public Health meeting in conjunction with this group, but this has been discontinued. The problems of all of these groups are so intermingled that there is distinct advantage in the single affiliated congress.

Various hospital problems were discussed. Different phases of medical education received consideration. The regulation of medical specialists, the care of the veteran, corporate contract practice, teaching of radiology, physiotherapy, and State Board problems, were the other big topics for half-day consideration each.

There assembles at this Congress, annually, a large group of men from over the country, who are outstanding in their various branches. Teachers, supervisors of medical education and practice. research men, survey men representing federal, state, institution, association and other organizations all intensely interested and engaged in the study of medical problems of the day and age. One can readily see why this Congress, therefore, becomes a veritable smelting pot for the best and the advance ideas pertaining to medical problems.

This year, I might say that medical economics was the watchword throughout the problem. In the opening program, under the title of "Functions of the Hospital" Chairman Ray Lyman Wilbur stressed economics. His big thought pertained to Federal Hospitals; and while he agreed with all of us in the belief that veterans deserve every care, still he thought there were better and more economical ways of rendering this every care to the veterans than to build more Federal Hospitals. He was sure we had built enough, and he felt very certain that we had already built too many. Undoubtedly he was in full accord with the action taken by the American Medical Association at its last spring meeting. It is very likely that Dr. Wilbur is a most valuable man for the medical profession to have in the President's Cabinet today.

In another half-day program there were subjects on medical service, on over-crowding of the profession, on economics of future practice, discussed by such men as S. Marx White, president of the American College of Physicians, C. C. Bass, Dean of Tulane, and Hugh Cabot, of Rochester, Minnesota. We again saw the economic side of the situation pushed to the forefront. Dr. Bass, of Tulane. did not believe that the medical profession was over-crowded. His data showed that there are more doctors per hundred thousand people in America than anywhere else in the world, but our people are more demanding, particularly of preventative measures. He showed that with our present rate of graduating medical students, with our present death rate in the ranks of doctors, and with our present increase of population, that the number of doctors per capita was not showing a dis-balance. His data on the cost in time and dollars of the modern medical education when compared to the income of the average doctor, was such that a fairly attractive balance or return on the investment could be shown. Both doctors White and Cabot stressed the importance of some form of group practice on an economic basis. They pointed out several ways in which this was being used over the country. In some places there is a form of group practice built up around a hospital. In other places it is being tried on a county medical society basis. In many others, it is on a private group basis. The economies were stressed and they appear not only in the form of dollars and cents so far as over-head in equipment and personnel are concerned, but they appear also in the teaching force that goes with this grouping of men. The older men have something for the younger, and the younger always have something for the older. In many places these groups are using the hospital physical equipment and personnel rather than to duplicate it in their private offices, as a further means of economy. Always, however, it must be remembered that there should remain the personal contact between the doctor and the patient. Never should the institution come in as the dominating factor and the director of the doctor.

The training of specialists, the function of the graduate school in the training of such specialists, and then also the control of these medical specialists after they are produced, came in for special consideration. At present there is but one licensing of all physicians, and there is a distinct tendency to govern this special practice to a greater degree. The exact form is only in the making.

There no longer seems to be the discord so prevalent a few years ago between the National Board of Examiners and the various State Boards. This year, during their half-day session, the present extent and value of annual registration came in for discussion. In one form or another, a large majority of the states now have this system. The cost varies from $1.00 to $10.00 per year. The sums thus acquired are used in various ways, but always in some form advantageous to medical practice.

The discipline of licensed practitioners was rather keenly discussed. The New York Board has a so-called "Grievance Committee," and before this board mal-practice and similar cases are urged to come with their grievances. It is thought that many such cases are here settled without going to the civil court. Before this committee also, doctors who are carrying on questionable practice are called, and it is rare that one has to be called upon the carpet the second time. It was interesting to note that the offenders came not only from the poorer schools but also from the best schools, and that there was a greater percentage coming from the United States schools than from foreign schools. Twenty per cent of those appearing in New York came from one of the better schools, and when this information was imparted to that medical college, there was much astonishment as well as prompt effort to cure the evil in future graduates.

Owing to ill health, Dr. N. P. Colwell has been replaced as Secretary of the Council on Medical Education, by Dr. William D. Cutter.

Again this year Mr. Hull, who is in charge of the Department of Exhibits for the A. M. A., had a modest show of tabulated facts pertaining to hospitals and medical education in general. This is the same man who for the past two years has helped Nebraska with her exhibit at the State Medical Association meeting and at the State Fair Health Education show. This exhibition feature is new at the Congress. I believe it is well worth while, because it gives in a concise, graphic, comparative way, many facts which we would not otherwise acquire and retain. In exactly the same way, I believe the exhibits are a worthwhile feature in our state meeting.

—J. S. Welch, Com.,
Lincoln.

PROGRESS AT THE DOUGLAS COUNTY HOSPITAL

At an inspection of the Douglas County hospital during the convention of the Nebraska Section, American College of Surgeons by Dr. M. T. MacEachern, associate director, the hospital was approved and Dr. MacEachern was particularly pleased with the organization of the complete staff representing all the specialties chosen largely from the two medical schools in Omaha. During the summer months, the staff is composed largely of non-school practitioners in Douglas County.

It may also be of interest to note that the new tuberculous and psychiatric wings will be open, very probably, sometime in May, and that there will be 85 beds devoted to psychiatry, and 125 beds devoted to tuberculosis. Douglas County has by actual count, over 500 cases of active tuberculosis and there are between 45 and 50 tuberculous patients from Douglas County now at the State Hospital for the Tuberculous in Kearney.

The old building will continue to be used for general medical and general surgical cases, and the upper floor of the wing now devoted to psychiatry will, when it is evacuated, be remodeled and made into a very satsifactory obstetrical department. The operating rooms will be enlarged.

There is now a full time registered x-ray technician, and a full time laboratory technician.

It is hoped within a short time to have the hospital accepted by the A. M. A., for interne training, and when this is done, it will be on a solid foundation for the further development of the hospital and a well equipped institution for the care of the sick poor in Douglas County.

AN INVITATION TO ATTEND IOWA STATE MEDICAL SOCIETY MEETING

The members of the Nebraska State Medical Association are cordially invited to attend the annual session of the Iowa State Medical Society, to be held in Sioux City, Iowa, May 4, 5 and 6. The program, which is an especially strong and interesting one, begins at 8:00 a. m. on Wednesday, May 4. and concludes at noon on Friday, May 6. There will be an hour and a half of medical and surgical clinics each morning, and symposia upon the following subjects are included in the program: kidney, blood diseases, neurological conditions, cancer, and pediatrics.

Presentation of a membership card in the Nebraska State Medical Association will admit any physician from this state to full privileges in all scientific sessions.

AMERICAN MEDICAL ASSOCIATION MEETING AT NEW ORLEANS

The American Medical Association annual meeting will take place at New Orleans, May 9 to 13. Those who plan to go should bear in mind that one and one-half fare for the round trip is available on the certificate plan. Buy ticket to New Orleans and ask for a certificate from your local agent, not a receipt. On presentation of that certificate at the headquarters at New Orleans it will be visaed and will entitle you to purchase return ticket at half rate.

EDITORIAL PARAGRAPHS

The annual meeting will be held at Lincoln May 24, 25, 26.

This is to advise that the next Nebraska Basic Science examination will be given May 3-4, University College of Medicine, Omaha, Nebraska.

Delinquent dues should now be paid, so reinstatement may be made at once. Remember a delinquent is not entitled to Medical Defense and gets the Journal by courtesy only, not by right.

Component medical societies may be interested in the new Saunders county plan of furnishing the program from their own membership every other month. At the alternate meetings, the programs are furnished by physicians and surgeons from our neighboring cities.

The libel suit brought by Norman Baker of Muscatine, Iowa, against the American Medical Association was decided in favor of the Association. Baker had operated a so-called Cancer Institute at Muscatine and his methods were exposed by the A. M. A.: hence the suit.

The following Nebraska physicians have successfully passed the examinations held by the American Board of Obstetrics and Gynecology and have received the diploma of the Board which certifies that these men have been duly accredited on the basis of specialization and proficiency.—Findley, Palmer, Omaha; Sage, E. C., Omaha.

Plans for a nation-wide Mother's Day Campaign to obtain better maternity care for expectant mothers are taking concrete form among women's clubs, church and civic organizations, health departments, medical societies and nursing groups, according to details which have been made public by the Maternity Center Association, 1 East 57th Street. New York City.

The general, oral and clinical, examination of the American Board of Obstetrics and Gynecology will be held in New Orleans on Tuesday, May 10. 1932, immediately preceding the meeting of the American Medical Association. For detailed information and application blanks apply to the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

The malaria treatment of general paralysis of the insane is now generally considered the most effective treatment of this condition. As a result the Public Health Service receives each year an increasing number of requests for infected mosquitoes for inoculation purposes. Plans are now under way to supply this need and to make further studies of this method of treatment in cooperation with various institutions where it is being applied.

Three former Nebraska "boys" returned to the state to participate in the programs of the Nebraska Section, American College of Surgeons in Omaha in February; Dr. A. W. Adson, formerly of Lincoln and a graduate of the State University, now of the Mayo clinic; Dr. Edgar V. Allen, formerly of Cozad, also graduate of the State University, and also of the Mayo clinic; and Dr. Philip Kruescher, formerly of DeWitt, now of Mercy hospital, Chicago.

The problem of an over-supply of nurses is becoming acute. A partial survey indicates that since 1920 nurses have increased 78%, whereas the population has increased but 7%. The figures for forty-two cities studied show that the average nurse has no more than 149 days of employment in any given year, according to the present sickness rate. In Bangor, Maine, she has not more than 77 days of work, and in Ottumwa, Iowa, where employment conditions are best among the cities studied, she can work not more than 201 days in the year. Rates for the other cities range between these two.

Some months ago we published in this *Journal* a colored insert 4-page ad of the Amerop Travel Service. It features a personally conducted tour to Europe on North German Lloyd steamers at very reasonable rates. Physicians planning a trip to Europe will do well to investigate this service. The ad is appearing now in the *Journal of the American Medical Association*, each week. The ad appeared in the *Nebraska State Medical Journal* only once and on a cooperative basis: if Nebraska physicians take this trip the *Journal* will derive a small commission. Full information may be had by addressing, Amerop Travel Service, 132 North LaSalle St., Chicago.

"Maggots are Back" is the heading of an editorial in the *Journal Lancet* of Minneapolis, which goes on to say that the venerable Dr. W. W. Keen, twenty-five years ago told of treating of Civil war wounds infested with maggots and gave the suggestion that the maggots sometimes seemed to be productive of good. Your editor of this Journal fifty years ago heard Dr. W. F. Peck, professor of surgery at the Iowa State University (also a Civil war surgeon) say that maggots did no harm in wounds, since they attacked only dead tissue. Your editor told this to the late Dr. Baer at Omaha two years ago and he was pleased to get this historic fact.

NECROLOGY

Barton B. Baker, Norfolk, Nebr.; native of Centerville, Iowa; Washington University College of Medicine, 1884; practitioner at Curtis and at Lexington, a total of twenty-six years; organizer of the Fidelity Reserve Life Insurance Co., at North Platte, in 1913; general agent of the Elkhorn Life and Accident Co., Norfolk, from 1921 to 1930; died of organic heart disease February 27, 1932, aged about seventy years. A widow, two step-daughters and a son survive.

Lloyd L. Nelson, Norfolk, Nebr.; native of Mondamin, Iowa; Creighton University College of Medicine, 1910; member, Nebraska State Medical Association; sometime president, Madison County Medical society; practitioner at Oakdale for six years; in eye, ear, nose and throat practice in Norfolk, in association with Dr. A. N. Howley, since 1917; in medical corps of the army during the World war; a man liked by all who came in contact with him; died March 1, 1932, of an organic heart lesion, aged forty-six years. He was unmarried.

Orville M. Moore, York, Nebr.; native of Brown county, Ill.; Eclectic Medical College, Cincinnati, 1884; physician and surgeon of York county for forty-eight years, first at Bradshaw, later at York; head of the York clinic; son of the pioneer Dr. S. V. Moore, early practitioner of York county; member, Nebraska State Medical Association; a man interested in community affairs and in science and philosophy; died February 18, 1932, aged about seventy-three years.

Andrew Crawford, Scottsbluff, Nebr.; native of Ireland; Nebraska University College of Medicine, 1888; practitioner of Omaha for twelve years before locating in Scottsbluff in 1900; one of the early physicians of Scottsbluff; died February 14, 1932, aged about eighty years. A widow, two daughters and a son survive.

John J. Cameron, Kearney, Nebr.; native of Canada; McGill University Faculty of Medicine, Montreal, 1895; in practice at Kearney since 1890; died February 21, 1932, aged sixty-eight years. A widow, two daughters and three sons survive. Dr. A. D. Cameron, Kearney, is a brother.

G. L. Roe, Beatrice, Nebr.; Louisville Medical College, 1879; practitioner at Beatrice, since 1888, previous to that in practice at Odell for seven years; member Nebraska State Medical Association; county physician of Gage county for a number of years; prominent in politics as a Democrat; sometime, superintendent of the Nebraska Institution for Feeble Minded; died suddenly of a heart attack, March 8, 1932, aged seventy-seven years. A widow, daughter and son survive.

M. S. Bias, Hurricane, West Virginia; college data unavailable; practitioner in Nebraska for many years, first at Ohiowa, later at Colon and until about seven years ago at Cedar Bluffs; died February 19, 1932, aged seventy-seven years.

AUXILIARY NOTES

The nominating committee of the Auxiliary is as follows:

Mrs. Lucien Stark, Norfolk, chairman,
Mrs. C. C. Tomlinson, Omaha,
Mrs. Floyd Rogers, Lincoln,
Mrs. Earl Farnsworth, Grand Island,
Mrs. C. G. Moore, Fremont.

The nominating committee will appreciate any suggestions relative to certain persons whom it is felt should be placed in nomination for the following offices: President-elect, vice president, treasurer, and two directors.

* * * * * *

"The function of a medical auxiliary is to interpret the medical profession to the public. So Mrs. Walter Freeman of Philadelphia, president-elect of the Auxiliary to the American Medical association, told the women's auxiliary to the Omaha-Douglas County Medical society, Tuesday at a luncheon in her honor at the Fontenelle hotel.

The daughter of a famed 95-year-old surgeon, author and editor, Dr. William Williams Keen of Philadelphia, Mrs. Freeman is the widow of a physician and the mother of two. One son, Walter Freeman, is professor of neurology at George Washington university, Washington, D. C., and another is doing research work at Harvard.

The speaker was presented by Mrs. C. C. Tomlinson, new president of the Omaha auxiliary. Other honor guests were Mrs. Clyde A. Roeder of Omaha, state president-elect; Mrs. Morris Nielson of Blair, state president, and Mrs. H. B. Miner of Falls City, state treasurer.

Following the luncheon Mrs. Clyde A. Roeder, president-elect, gave a tea at her home.

THE SOCIETIES

The **Omaha-Douglas County Medical Society** met January 12.

The secretary announced that in view of the petition to the United States Congress for recognition of the yellow fever work done by Dr. A. S. Pinto, that the Medical Society should go on record as approving this petition and that copies of the resolution in Dr. Pinto's behalf should be sent to members of Congress from Nebraska urging speedy action. Motion duly made and seconded and passed unanimously. The chair was then turned over to President Pinto who had been out of the auditorium during the previous discussion.

Scientific program opened with Dr. L. E. Moon's paper on the "Treatment of Hemorrhoids, Both Operative and by Injection Methods, and the Result to Be Expected From Their Treatment." Discussion by Dr. Russell Best.

Dr. J. A. Weinberg presented a paper on the "Surgical Treatment of Bronchiectasis."

At the meeting of January 26, President Pinto called on Dr. Floyd Clarke to introduce the first guest speaker of the evening, Dr. William Thalheimer, director of the Nelson Morris Institute for Medical Research of the Michael Reese Hospital, Chicago. Dr. Thalheimer spoke on the present status of the treatment of poliomyelitis. According to the speaker the treatment with convalescent serum has definite place in the care of a patient with poliomyelitis. He laid special stress on the importance of organizing properly a service whereby convalescent serum may be available to the physician on short notice. He also touched on the use of convalescent serum in other conditions than poliomyelitis, particularly measles and scarlet fever. The organization of a serum service in a community was discussed thoroughly.

The next speaker on the program was Dr. Max Cutler also of Chiacgo. Dr. Cutler is director of the tumor clinic of the Michael Reese Hospital. He discussed the recent advances in the diagnosis and treatment of the various forms of cancer. The radium treatment was particularly stressed. The discussion though highly scientific was very practical.

This meeting was the largest in attendance for at least two years.

At the meeting of February 9—The first paper on the scientific program was by Dr. Frederick W. Niehaus, on "Cardiac Enlargements with Special Reference to Orthograms." This was discussed by Drs. J. E. Summers and John Allen.

Dr. John P. Lord then talked on "Deformities and Disabilities of the Lower Extremities." This lecture was illustrated by lantern slides and cinema. Discussion by Drs. Pinto and Fitzgerald.

At a meeting held in the directors rooms of the First National Bank, Grand Island, on February 25, 1932, the members of the **Hall, Merrick and Howard County Medical Societies** met to form a combined society, the purpose of which was the promotion of better scientific medical meetings for physicians in this territory.

The president elected for the combined societies was Dr. J. V. Reilly, the secretary, Dr. Amil J. Johnson. The constitution adopted was elastic enough to include other counties wishing to join.

Dr. J. E. Benton, of Central City, Nebraska, presented a paper on tubal pregnancy and Dr. D. B. Wengert of St. Paul, Nebraska, presented one on gastric carcinoma.

The **Hall County Medical Society** held their January medical meeting at Grand Island on January 28. Dr. G. Alexander Young of Omaha was the guest speaker and delivered to the society a very splendid discourse on neuropsychiatric situations. This was very much appreciated. Doctors from surrounding towns were guests at this meeting.

Members of the **Saunders County Medical Society** attended a regular monthly meeting held in Wahoo February 15. The session was preceded by a steak dinner served at the Blackstone Cafe, and then held at the City Hall. Dr. F. W. McCaw, of Colon read a paper on "Treatment of Anemia," and Dr. W. W. Noyes, Ceresco, presented the topic, "Coronary Occlusion." This was followed by a round table discussion. Dr. M. E. Lathrop, president of the group, was chairman. Dr. George Covey and Dr. Floyd Rogers, of Lincoln, were guests.

—C. W. Way, Sec.

The Seward County Medical Society held its regular monthly meeting at Seward Feb. 25th. A nice dinner was enjoyed at the Windsor Hotel. Drs. Hamilton and Johnson of Friend, Neb., were guests of the society. Dr. Miles J. Breuer of Lincoln, Neb., addressed the Society on Tuberculosis. This was a very instructive and interesting paper. The talk was followed by a round table discussion.

—Lloyd Ragan, Sec.

Talks on "Diagnostic Points in Traumatic Epilepsy" by two Lincoln physicians, Dr. K. F. J. Hohlen and Dr. D. J. Zimmerman, were features of the program at the **Dodge County Medical Society** meeting February 29. The program at the Hotel Pathfinder followed a 6:30 dinner for the medical association and ladies' auxiliary.

The **Richardson County Medical Society,** together with the Ladies' Auxiliary, met at Humboldt, February 23. After a sumptuous dinner at the Park hotel, the doctors repared to the office of Dr. Waggener where a very interesting and instructive program was given. Drs. Nelson and Waggener each read a paper, after which a general discussion was held on the subject given in their papers.

The March meeting of the **Lincoln County Medical Society** was held at the Yancey hotel, North Platte, under the presidency of Dr. H. L. Clarke. Dr. R. L. Russell, Sutherland, presented the subject, "Fracture of the Clavicle."

HUMAN INTEREST TALES

A tumor clinic has been opened at St. Joseph's hospital, Omaha.

Dr. M. F. Hall, Neligh, has filed for Congress on the Farmer-Labor ticket.

Dr. and Mrs. C. C. Gafford, Wymore, are spending a short period in California.

Dr. Theodore Peterson, Holdrege, is about to go to Vienna for six months of study.

The marriage of Dr. Roy Platz and Miss Frances Foote, both of Omaha, is announced.

Dr. A. R. Knode, Omaha, has submitted to two operations recently and is convalescing nicely.

Dr. and Mrs. Howard Gray, Rochester, Minn., visited Dr. Gray's parents in Omaha, early in March.

Dr. Charlotte Seiver, Fremont, before the Women's Club recently gave a talk on "The Adolescent Child."

Dr. J. P. Connolly, Omaha, former clerk of the United States court at Shanghai, talked to the Triangle club, on "What's All the Commotion in China About," last month.

Dr. C. C. Drummond, Norfolk State hospital, spoke before the Norfolk Lions club on experiences and observations in India, based on a twenty-seven years' experience as a medical missionary.

Dr. J. R. Beatty, for twenty-five years a general practitioner at Butte, has moved to Newcastle, Wyo.

His health having failed, he will engage in the theatre business after a period of rest.

The jury in the case of Dr. H. J. O'Donnell, Paxton physician on trial for incendiarism, which he admitted, found him not guilty, because of insanity at the time of the commission of the act.

Dr. Leo Hombach has become associated with Dr. A. E. Gadbois at Norfolk. Dr. and Mrs. Gadbois have gone to Vienna, where the doctor will follow special work in eye, ear, nose and throat diseases.

The Godinos, "Siamese twins" of Philippino birth and American rearing, have been exhibited to the medical profession in the principal cities of Nebraska lately. They are 24 years of age and are joined in the lower dorsal and lumbar regions.

Dr. A. P. Fitzsimmons, Tecumseh, has filed for state treasurer on the Democratic ticket. He was treasurer of the Philippine Islands for six years in the twenties. He also served in the medical corps with the American troops in the Spanish-American war.

Dr. Victor E. Levine, professor of biochemistry and nutrition at Creighton university medical school, has been reappointed a member of a committee of the American Dietetic association to study the problem of introducing nutrition courses in medical schools, he was informed Sunday.

DUTY

The sweetest lives are those to duty wed,
Whose deeds both great and small,
Are close knit strands of an unbroken thread,
Whole love ennobles all.
The world may sound no trumpet, ring no bells;
The book of life, the shining record tells.
Thy love shall chant its own beatitudes,
After its own life-working. A child's kiss
Set on thy singing lips shall make thee glad;
A poor man served by thee shall make thee rich;
A sick man helped by thee shall make thee strong;
Thou shalt be served thyself by every sense
Of service which thous renderest.

—Robert Browning.

MOVIN'

Some doctors like to keep a movin',
  Seems they're never satisfied,
Allers want to be a travelin',
  Couldn't stay put, if they tried.

Like an old cow in a medder—
  Grab a bite an' 'fore it's gone,
See some grass that looks greener,
  Jest a little furder on.

Movin' makes a doctor shiftless
  An' their credit kinder bad,
'Cause 'taint in the cards to prosper
  When you're allers on the gad.

If they'd jest stay sorta settled
  An' keep hoss sense 'neath their hat.
You can bet they'll git some practice,
  Makes no difference where they're at.

'Course, if it's a shady reputation
  That's a follerin 'em around,
Then they might as well keep movin',
  'Cause they'll never live it down.

—R. C. DEPPEN, M. D.

ROSTER OF OFFICERS—1932

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Homer Davis, Genoa	1934
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L. W. Rork, Hastings	1932
C. A. Selby, North Platte	1932
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ANNUAL MEETING LINCOLN, MAY 24, 25, 26, Lincoln Hotel

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

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CONTENTS

Page
Scientific Program, Nebraska State Medical Association, Annual Meeting, Lincoln Hotel, Lincoln 177
Review of Forty-seven Cases of One Sided Branch Block, Arthur L. Smith, M. D., F. A. C. P. 179
Carcinoma of the Oral Cavity, A. F. Tyler, B. Sc., M. D. 185
Spinal Anesthesia (Part I), Charles H. Arnold, M. D. 189
Ureteral Calculi, Arbor D. Munger, B. Sc., M. D., F. A. C. S. 192
Contact Glasses, J. Hewitt Judd, M. D. 195
Agranulocytosis Angina, John Buis, M. D., N. E. Hansen, M. D. 197
Urethral Caruncle, D. T. Quigley, M. D., F. A. C. S. 201
Drug Idiosyncrasy Due to the Phenyl Group, Edward S. Maloney, M. D. 205
Familial Icterus Gravis of the Newborn: Case Report, Joseph Kuncl, M. D. 206
A Simplified and Improved Method for Radical Amputation of the Breast, V. L. Siman, M. D. 207
EDITORIAL—
The Missouri Valley Medical Society Gives a Superb Postgraduate Course 208
Page
The Forthcoming Annual Meeting 208
Your Sixty-fourth President 209
Presidential Pertinent Points 209
Complimentary Dinner Celebrating Fifty Years in Medical Profession Tendered Editor 210
Most Governments Are Inefficient or Corrupt—Some Are Both 211
University of Nebraska College of Medicine Post-Graduate Course 212
The Stockman and the Doctor 212
Dermatologic Hint No. III 212
Obstetrical and Gynecological Hints. No III 212
Dr. John P. Lord and Dr. Harry Hapeman on the Fifty Year Honor Roll 213
The Surgical Treatment of Pulmonary Tuberculosis 214
Editorial Paragraphs 215
Necrology 216
Nebraska Tuberculosis Association Meeting 216
Auxiliary Program and Notes 217
Tuberculosis Abstracts 217
The Societies 219
Human Interest Tales 219
Books Received 220
Book Review 220

SCIENTIFIC PROGRAM, NEBRASKA STATE MEDICAL ASSOCIATION, ANNUAL MEETING, LINCOLN HOTEL, LINCOLN

TUESDAY, MAY 24, 1932—8:30 A. M.

Invocation	Rev. F. L. Rodenbeck
1. Purpuras	Dr. A. S. Rubnitz, Omaha
2. Blood Sedimentation Test in General Surgery	Dr. Manuel Grodinsky, Omaha
3. Cardiac Hypertrophy	Dr. Frederick W. Niehaus, Omaha
4. Limitations of Iodine in Goiter	Dr. Roy H. Whitham, Lincoln
5. Occupational Skin Disease	Dr. J. A. Borghoff, Omaha
6. Therapeutic Abortion and Laparo-Hysterotomy	Dr. Harold Morgan, Lincoln
7. Hay Fever and Asthma Treatment	Dr. Edward S. Maloney, Omaha

TUESDAY, MAY 24, 1932—2:00 P. M.

Installation of the President of the Nebraska State Medical Assn.	Dr. K. S. J. Hohlen, presiding
Introduction of President-elect Dr. A. E. Cook	Dr. Lucien Stark, President
Address	Dr. A. E. Cook, President-elect
1. Symposium, Toxaemias of Pregnancy:	
a. Pernicious Vomiting	Dr. E. C. Sage, Omaha

   b. Nephritis Complicating Pregnancy........Dr. Chas. Moon, Omaha
   c. Pre-eclampsia........Dr. L. S. McGoogan, Omaha
   d. Presumable and Unclassified Toxaemias........Dr. Lloyd Hoffman, Omaha
2. Surgical Aspects of Pulmonary Tuberculosis........Dr. Thomas Kinsella, Glen Lake, Minn.
3. Report of Delegate to the Council on Medical Education of The American Medical Association........Dr. J. S. Welch, Lincoln
4. Traumatic Surgery in a Rural Hospital........Dr. Chas. G. McMahon, Superior
5. Hyperthyroidism and Neurasthenia........Dr. W. J. Arrasmith, Grand Island

WEDNESDAY, MAY 25, 1932—9:00 A. M.

1. Infant Feeding........Dr. Ernest Wegner, Lincoln
2. Pathological Diagnosis and Treatment of Tumors of the Breast........Dr. Herbert H. Davis, Omaha
3. Sexual Neurosis in General Practice. Impotence and Frigidity..Dr. Karl Menninger, Topeka, Kan.
4. The Diseased Gallbladder........Dr. E. G. Johnson, Grand Island
5. Mumps With a Double Complication of Meningitis and Pancreatitis........Dr. W. J. Gentry, Gering
   Discussion: Dr. A. L. Cooper, Scottsbluff.
6. Fascia Transplant in Treatment of Hernia........Dr. J. Frederick Langdon, Omaha
7. Cholecystography—Discussion of Intravenous and Oral Methods........Dr. A. D. Dunn, Omaha

WEDNESDAY, MAY 25, 1932—2:00 P. M.

1. The Present Status of Botulism in Food Poisoning........Dr. Chas. Swab, Omaha, and Dr. H. F. Gerald, Omaha
   Discussion: Dr. John Myers, Omaha.
2. Surgical Address........Dr. Clayton Andrews, Lincoln
3. Early Diagnosis of Carcinoma of Cervix........Dr. Henry Schmitz, Chicago
4. Cardio Vascular Syphilis........Dr. R. L. Traynor, Omaha
5. Surgery of Sympathetic Nervous System........Dr. J. J. Keegan, Omaha
6. Practical Points in the Handling of Patients with Gastro-Intestinal Disease........Dr. Walter C. Alvarez, Mayo Clinic, Rochester, Minn.
7. Osteomyelitis of the Skull........Dr. C. G. Moore, Fremont

THURSDAY, MAY 26, 1932—9:00 A. M.

1. Symposium—Cerebral Birth Injuries, Prevention and Treatment
   a. Pathogensis and Clinical Syndromes........Dr. G. A. Young, Omaha
   b. Prevention........Dr. W. H. Taylor, Omaha
   c. Treatment........Dr. Clyde Moore, Omaha
2. Report of the Delegates to Convention of A. M. A........Dr. B. F. Bailey, Lincoln
   Dr. R. W. Fouts, Omaha
3. Surgical Relief of Some of the More Severe Cases of Paralytic Deformities and Disabilities of the Lower Extremities........Dr. J. P. Lord, Omaha
4. Some Problems of Urgent Surgery in Country Practice........Dr. Walter Benthack. Wayne
5. ....Dr. A. A. Smith, Hastings
6. Surgical Procedures on the Sympathetic Nervous System in the Treatment of Peripheral Vascular Diseases........Dr. Walter D. Abbott. Des Moines
7. Anterio Poliomyelitis, Treatment, Diagnosis and Prognosis........Dr. Floyd Clark. Omaha

THURSDAY, MAY 26, 1932—2:00 P. M.

1. An Analysis of the Factors Tending to Minimize the Mortality Rate in Prostatectomy........Dr. Edwin Davis, Omaha
2. ....Mr. Earl Cline, Atty. at Law, Lincoln
3. Myocardial versus Valvular Defects........Dr. Geo. W. Covey, Lincoln
4. Wiring an Aneurysm of the Thoracic Aorta........Dr. Max Emmert, Omaha
5. The Efficient Physician........Dr. F. W. Heagey, Omaha
6. The Psysiology of Mucus Secretion with Some Experimental Results On the Presention of Ulcer with "Gastric Mucin"........Dr. A. C. Ivy, Chicago, Ill.
7. Industry and Arthritis........Dr. J. E. M. Thomson, Lincoln
8. The Modern View Point of Traumatic Epilepsy
   Movie—Encephalorgraphy as an Aid to Diagnosis........Dr. K. S. J. Hohlen. Lincoln

REVIEW OF FORTY-SEVEN CASES OF ONE SIDED BRANCH BLOCK

ARTHUR L. SMITH, M. D., F. A. C. P.,
Lincoln, Nebraska.

Branch block is a condition in cardiac disease which is often overlooked since the diagnosis of it can be made only by means of the electrocardiograph. The diagnosis is often simple when this instrument is employed and since the prognosis is so serious I have thought it worth while to review 47 cases I have been able to trace for at least eighteen months after coming under observation. This work has been done during the past eight years and all patients were seen in my office while the tracings have been taken on a Boulitte electrocardiograph with polygraphic and phonocardiographic attachments.

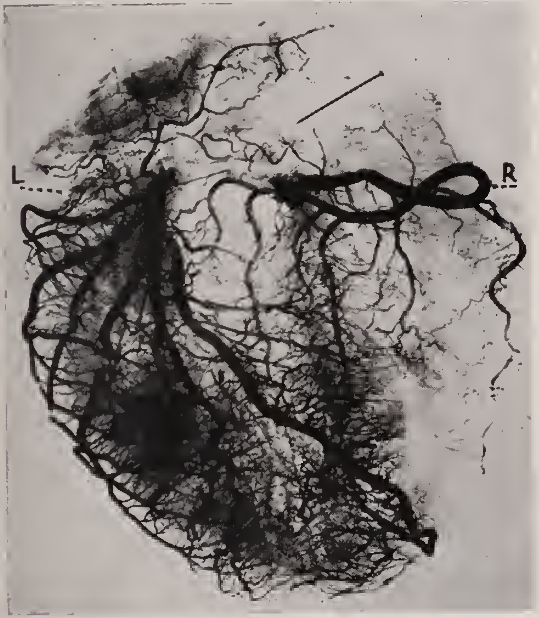

Fig. 1. Roentgram of the heart after injecting the vessels with an opaque substance. Showing the right (R) and left (L) coronary arteries. (After Gross).

Branch block may be complete or incomplete and these may be permanent or temporary. This paper deals with forty-seven cases of complete permanent one-sided branch block.

ANATOMY OF THE CONDUCTION SYSTEM

The impulse from the auricles reaches the ventricles through the bundle of His. Near the superior border of the interventricular septum this bundle divides into two branches, one supplying the tissue of the right ventricle and the other that of the left. The branch to the right ventricle runs down the septum for some distance as a single strand under the endocardium before it divides into smaller branches to form the Purkinje network.

The branch to the left ventricle pierces the septum just posteriorly and inferiorly to the membranous portion, breaks up at once into fine fibers and spreading fanlike runs downward under the endocardium covering the septum.

Gross has shown the blood supply to the bundle branch in the right ventricle comes from the earliest branch of the various descendents of the left coronary artery. The branch to the left ventricle is supplied by twigs from the septal branches of the right and left coronary arteries—from the left in front and right behind.

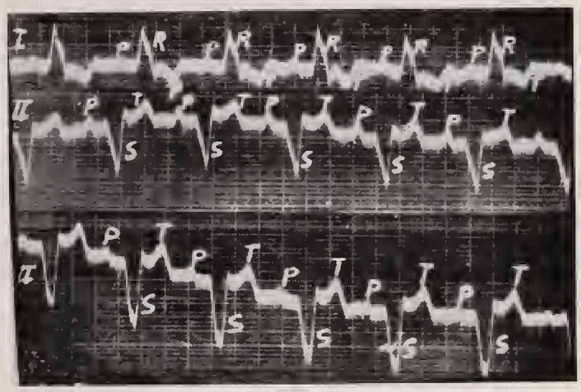

Fig. 2. Complete permanent right branch block. Q R S complexes are high and notched with a base width of 0.15 second. Obtained from man, aged 62 years with hypertensive and coronary heart disease.

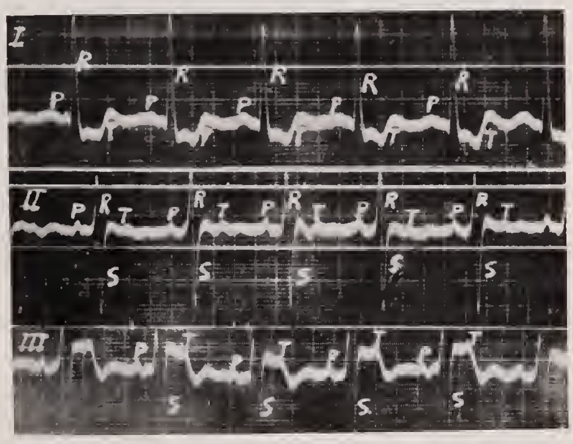

Fig. 3. Complete permanent right branch block. Q R S complexes of high amplitude. Q S width 0.12 second. Male, 56 years with arteriosclerosis, hemiplegia and hypertensive heart disease.

If a part of one branch of the bundle is destroyed the impulse cannot reach the ventricle on that side by the usual path. It must first pass through the septum from the unaffected side and since the passage of the stimulus through the muscle tissue is one-tenth as fast as through the Purkinje system it is delayed on the affected side.

Right bundle branch block is much more common than left. This is probably due to the fact the one strand on the right is more easily destroyed by one small lesion while the branch on the left is widespread and also has a double blood supply.

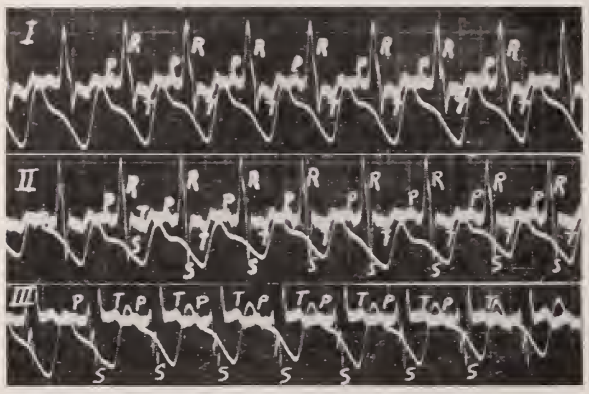

Fig. 4. Complete permanent right branch block. Notched high R waves in leads I and II. Split S wave in lead III. T in lead I biphasic. Brachial polygram normal. Q S width 0.16 second. Male, aged 40 years with Raynaud's disease and coronary disease.

PATHOLOGIC ANATOMY (EXPERIMENTAL)

In animal experimentation the problem was solved, in the first place, by sectioning various parts of the branches of the auriculo-ventricular bundle of His. This was first done by Rothberger and Eppinger in 1910 and later by many others. According to the points sectioned the resulting abnormal electrocardiograms resembled the accumulated clinical ones. The cutting of both branches near their origin has the same result as the dividing of the main stem.

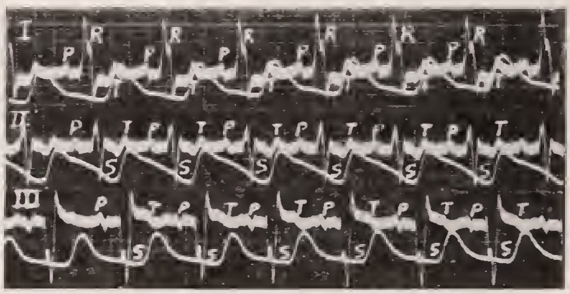

Fig. 5. Complete permanent right branch block. Split Q R S complexes of high amplitude in all leads. Q S width 0.14 second. All T waves are biphasic. Brachial polygram of low amplitude due to low blood pressure. Heart generally hypertrophied and dilated due to syphilis of the myocardium and coronary disease. Male, aged 44 years.

The section of the right branch results in an increased excitation of the left ventricle and a slowing of the speed of the stimuli in the right side, thus the left ventricle will predominate and a levogram appears in which a deep "S" wave is seen in the third lead with an accentuation of the "T" wave, a widening of the "Q-R-S" group in all leads and all leads are biphasic, the deflection resembling extra systoles arising in the left ventricle.

On the other hand if the left branch is sectioned the opposite is produced and for analogous reasons a dextrocardiogram develops. The stimulus encounters obstacles on the sectioned side and it must detour into the muscle tissue which retards it and results in an elongation of the systolic phase and in the electrocardiogram a prolongation of the "Q-R-S" group beyond the physiological duration of 1/10 of a second and an increase in its height. In sectioning of the arborizations (Purkinje) the "R-S" is lower and the ventricle group is not biphasic but otherwise the findings are the same. Finally the whole is the picture of many extra ventricular systoles in which the amplitude and change in the direction of the "T" wave are of differentiating importance.

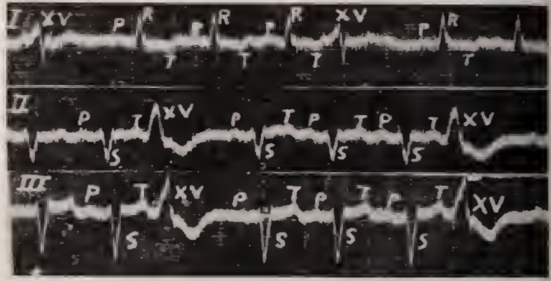

Fig. 6. Complete permanent right branch block. Notched Q R S complexes in all leads. Low T in leads I and II. Q S width 0.12 second. Extrasystoles (x v) rising in left ventricle. Body tremor distorts the whole tracing. Female, aged 65 with hypertensive and coronary heart disease and diabetes.

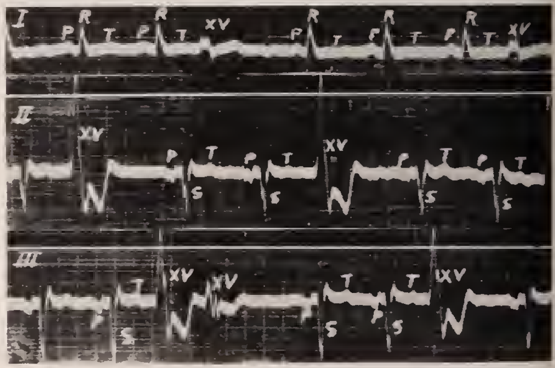

Fig. 7. Complete permanent right branch block. Q R S complexe slurred in lead I, split in lead II aud notched in lead III. Q S widt 0.11 second. Extra systoles (x v) rising in right ventricle from two separate foci. P waves in lead I and II are directed downward. Female 54 years with asthma and coronary disease.

In permanent complete block the stimulus must pass through the muscle tissue and is slowed accordingly while in the incomplete block the transmission of the stimulus is slowed in it course over the branch. Two groups are recognized—a concordant one in which all complexes in all three leads point in the same direction and a discordant one in which lead one and three are opposed. The first is frequent in animal experimentation and the second in clinical work. The explanation of the differences is questionable, but ventricular hypertrophy or preponderance and differences in anatomy undoubtedly are factors. Intoxicating substances such as digitalis with strontium chlorid will produce the above defects.

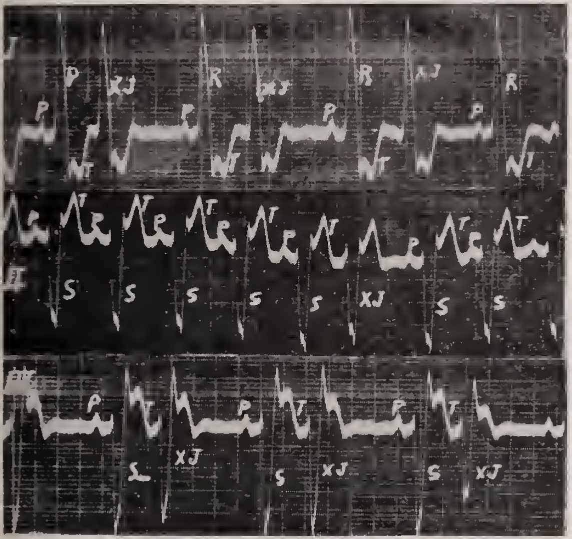

Fig. 8. Complete permanent right branch block. High Q R S complexes, notched in lead II. Extra systoles (x j) rising in the junctional tissue. Pulses bigeminus in lead I and III. Q S width 0.16 second. Female, aged 59 years with hypertensive heart disease.

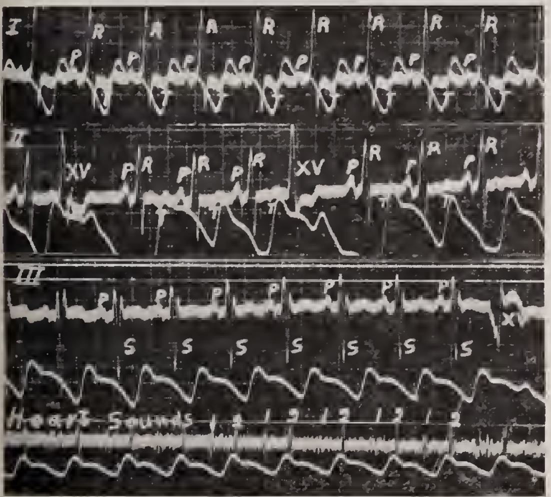

Fig. 9. Complete permanent right branch block. Q R S complexes of high amplitude. Q S width 0.12 second. Extra ventricular systole (x v). Polygram in lead II shows the weak wave in the brachial artery resulting from extra systole. Heart sounds normal in duration but greatly decreased in intensity. Male, aged 48 years with coronary disease and angina pectoris.

ELECTROCARDIOGRAPHIC FINDINGS

By electrocardiographic observations the principal characteristics of a complete one sided branch block are:

1. The "P" wave is the recognized origin of the atypical ventricular complex.
2. The "P-R" interval is often increased beyond the physiological limit of 0.2 of a second.
3. The duration of the "Q-R-S" group is longer than 0.1 of a second and as a rule covers more than one-third of the entire ventricular complex.
4. The relatively high "Q-R-S" wave.
5. The biphasic quality of the ventricular activity.
6. Slurring, splitting or notching in one of the diversions of the initial wave.

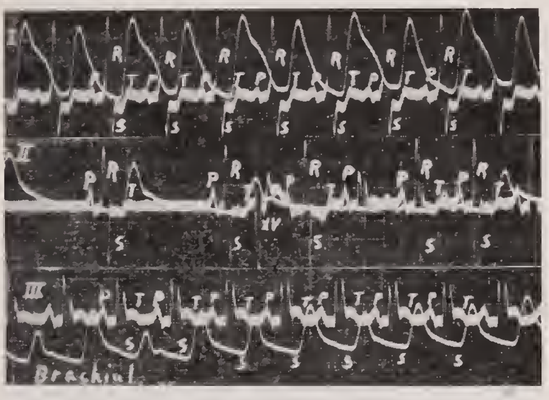

Fig. 10. Same patient as 9. Nine months later. Vagal block first two complexes in lead II. Interpolated extra ventricular (x v) systole in lead II. Polygram now shows a pulsus alternans and his myocardial disease has greatly increased.

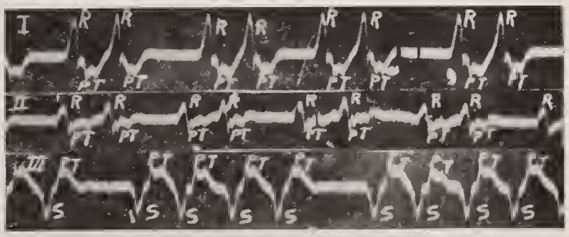

Fig. 11. Complete permanent right branch block. Q R S complexes of bizarre type. All stimuli arise in junctional tissue. P waves follow Q R S complexes. Vagal block causes arrhythmia. Q S width 0.12 to 0.16. Male, 62 years with coronary disease seen in Wenckebach Clinic in Vienna.

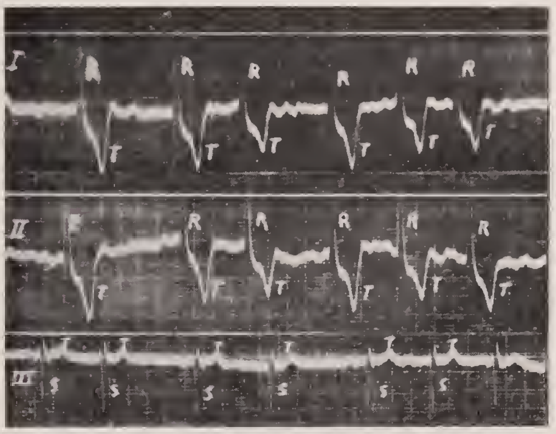

Fig. 12. Complete permanent right branch block coexistent with auricular fibrillations. Q R S complexes of high amplitude with deep T waves in lead I and II. Q S width 0.11 second. Male, aged 66 years with coronary sclerosis.

7. The generally increased strength of the "T" wave.

8. Extra systoles often occur on the side of the lesion.

9. The foregoing changes must be permanent, otherwise a diagnosis of a temporary complete block must be made.

POLYGRAPHIC AND PHONOCARDIOGRAPHIC FINDINGS

There is nothing characteristic in the polygram but the various types of associated arrhythmias and the varying strength of the beats are traced. In the phonocardiogram murmurs of various types are seen while weak heart sounds and reduplications are registered. In hypertensive hearts the second sounds are intensified. Of course, in irregularities the heart sounds are as irregular as the contractions of the heart. Large hearts with weak sounds and low blood pressure

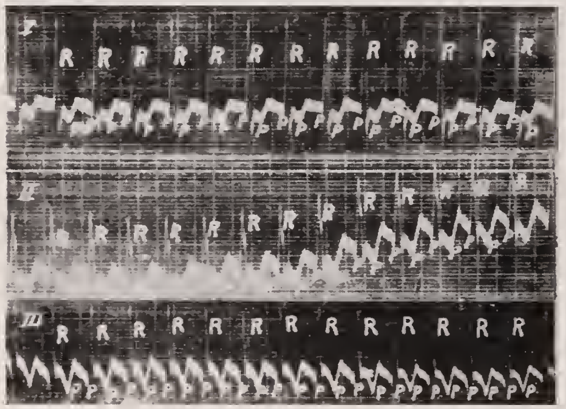

Fig. 13. Intraventricular block coexistent with auricular flutter. 2 : 1 block. Auricular rate 196 with a ventricular rate 118. Concordant,—all ventricular complexes directed upward. Q S width 0.11 second. Female, aged 38 years with coronary disease.

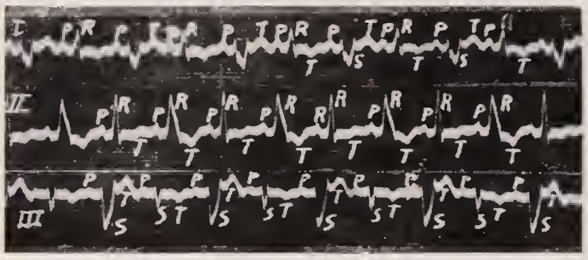

Fig. 14. Alternating branch block. All complexes are of sinus node origin. One normal ventricular complex (negative T in lead I) is followed by a typical branch block complex. This is due to fatigue of a partially diseased bundle branch. Normal complex Q S width 0.09 second, branch block Q S width 0.12 second. Female, aged 59 years. Hypertensive and coronary heart disease.

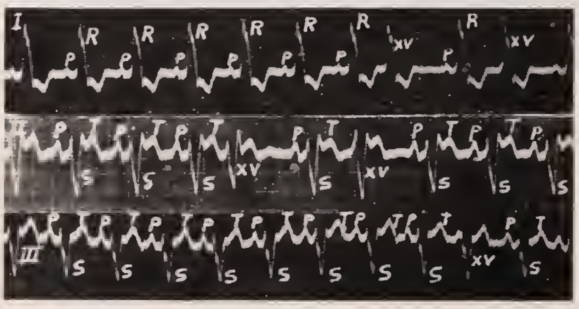

Fig. 15. Same patient as 14, eight months later. Complete permanent right branch block has now developed. Q R S complexes notched and of high amplitude. Q S width 0.14 second. Extra systoles (x v) rising in junctional tissue.

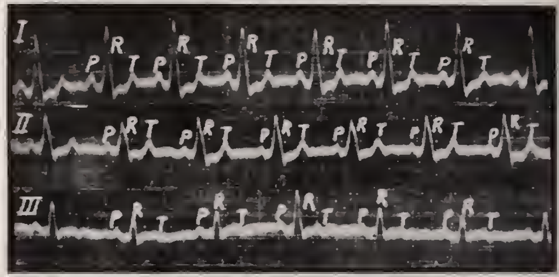

Fig. 16. Concordant permanent intraventricular block. Slurring of all ventricular complexes. Monophasic. Q S width 0.13 second. Male, aged 54 years. No cardiac changes.

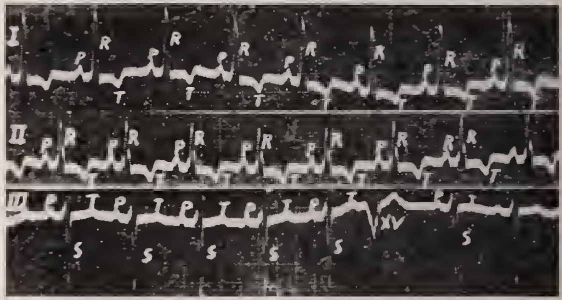

Fig. 17. Left ventricular preponderance. Ventricular complexes of high amplitude slurred in leads I and II. Negative T waves in all leads. Extra ventricular systole (x v) in lead III. Male 48 years of age with rheumatic aortic disease (regurgitation), aortic configuration and myocardial degeneration. Passed for insurance three months before, died five months later from heart disease.

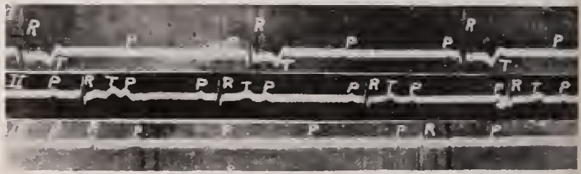

Fig. 18. Complete block of the bundle of His. Negative T in lead I and III. Rate of auricle 72 to 86, of ventricle 24 to 36. Male 48 years of age with myocardial degeneration, foundry worker. Seen in the Heart Station in Vienna.

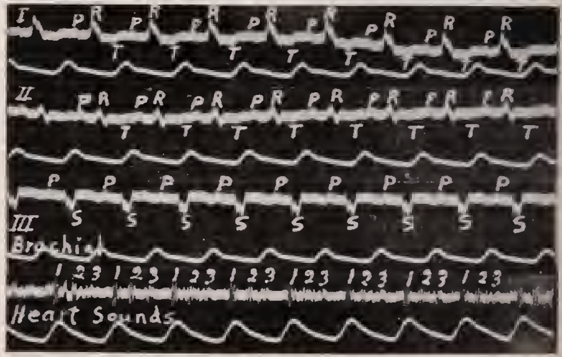

Fig. 19. Incomplete right branch block. Low Q R S complexes which are split. Q S width 0.15 second. T waves low in all leads. Polygram shows small brachial contractions. In the phonocardiogram are seen three sounds, each of normal duration but decreased in intensity. Male aged 44 years with syphilis of the heart and coronary occlusion. Heart sounds are always weak early in coronary occlusion.

forecast a poor prognosis. These two instrumental findings are not pathognomonic as is the electrocardiogram but they are of assistance in clarifying the situation.

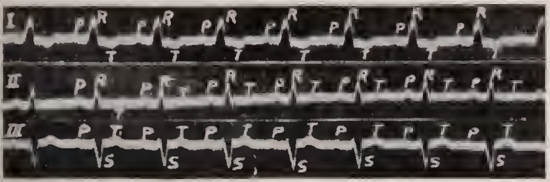

Fig. 20. Incomplete permanent right branch block approaching complete type. Q R S complexes of medium height, split in lead I and II. Q S width 0.11 to 0.14 second. Male, aged 73 years with chronic nephrosis and coronary disease.

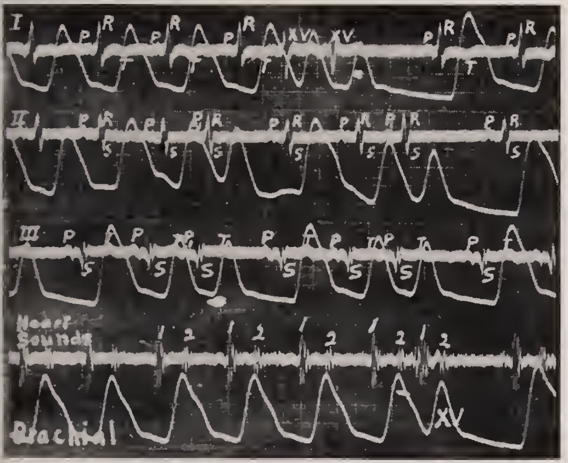

Fig. 21. Approaching branch block type. Q S width 0.1 second with negative T waves in lead I and III. Extra ventricular systoles (x v) in lead I and extra auricular systoles (p) in lead II and III. Polygram shows the irregularity of rhythm and height of pulsations due to extrasystoles. Heart sounds normal in duration, sequence and intensity except near the end where an extra ventricular systole (x v) increases the duration of the first sound and changes the regularity. Male, 56 years with myocardial degeneration.

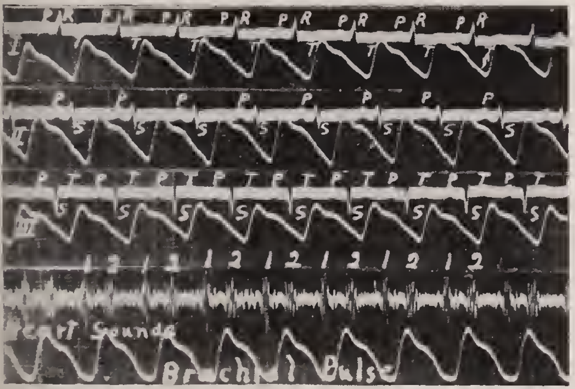

Fig. 22. Myocardial degeneration in male, 56 years of age with hypertension and hypertensive heart. Q R S of low amplitude. Low negative T waves in all leads. Left axial deviation. Q S width 0.08 second. Approaching branch block type. Polygram normal. Heart sounds show the first to be normal but second is increased in intensity and duration.

DIFFERENTIAL DIAGNOSIS

The branch block must be differentiated from left and right axial deviations due to ventricular preponderance. These latter do not have an increase in the "Q-S" duration, there is no slurring, splintering or notching of the "Q-R-S" group and they are not biphasic.

In coronary occlusion a negative "T" may be present and the descending portion of the "R" wave may not reach the base line. In various ventricular myocardial changes the ventricular deflection may be altered but if the branch is not included all the characteristics of the branch block are not fulfilled.

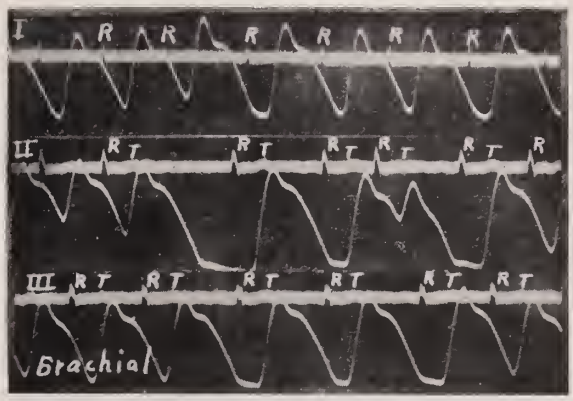

Fig. 23. Myocardial degeneration in female 44 years of age. Auricular fibrillation. No P waves. Q R S complex of low amplitude. T waves almost flat. Polygram shows irregularity in rhythm and height of waves.

In intraventricular block, the complexes are of longer duration than 0.1 second and may show notching. The deflections are small and of low voltage. There may be abnormalities of the "T" wave but the curves are not biphasic. This is due to changes in the Purkinje system and to delay in conduction through these finer branches.

SYMPTOMS

There are no symptoms of branch block. However, there are frequently associated with it angina pectoris, congestive heart failure and the various types of arrhythmias.

SIGNS

There are no characteristic signs of intraventricular block except the pathognomonic electrocardiogram on which the diagnosis depends. When heart sounds are clearly reduplicated branch block should be suspected. Usually heart disease of some type is present. Cardiac enlargement is a common finding but valvular disease is infrequent. Hypertension may be associated and there may be signs of heart failure. The roentgram is of no particular assistance.

ASSOCIATED PATHOLOGIC CONDITIONS

In early life rheumatic carditis may be a causative factor while between 40 and 50 years syphilis is frequently present. Many of the cases occur later in life and are often due to vascular changes. High blood pressure often is associated and we may suppose changes in the coronary arterioles.

Transient branch block may be due to deficient blood supply through partial obliteration of the small arterioles.

Permanent lesions are the result of degenerative processes from which there can be no recovery. Many cases seem to be due to coronary disease apart from high blood pressure. Microscopic examination of the affected bundle often shows obliterative changes in the arterioles supplying it. The fibers of the bundle may show degenerative changes. However, many of these fiber changes defy detection by our present methods of examination of pathologic tissue. In the 44 patients who have died within 18 months after coming under observation the following principal associated pathologic findings were present:

9—Hypertension of various types with hypertensive heart.
4—Syphilis of the heart.
1—Aortic regurgitation with aortic configuration.
27—Coronary disease.
1—Diabetes with coronary sclerosis.
1—Endarteritis obliterans with coronary occlusion.
1—Mitral stenosis with decompensation.

CLINICAL FEATURES

There are no physical signs which are of value in the diagnosis of this bundle change. It does not seem to change the function of the heart. The common clinical findings are dilatation or hypertrophy of the heart. I have never found it in a clinically normal heart. Often congestive heart failure is present. Angina pectoris is frequent. Gallop rhythm and pulsus alternans are at times present. In a few cases no cardiac changes can be discovered.

Such a lesion alone cannot be of much pathologic or physiologic gravity but its importance lies in the fact that in most of these hearts a widespread damage has taken place in the ventricular myocardium.

PROGNOSIS

The prognosis in permanent one sided bundle block is decidedly serious and only three patients in this series have lived longer than 18 months. When we consider these 47 patients were capable of coming to my office we must realize the necessity of a careful examination in those complaining of symptoms directed toward the heart. The three who have lived beyond 18 months have survived five years, four years and three years after coming under observation.

In Willius' series of 66 cases, 43 were dead in one year. White and Viko in 36 cases had a mortality of 13 in one year while Cowan and Bramwell found 14 in 24 had died in the same period.

When heart failure is present the prognosis is bad, while if failure has not appeared or if slight and not advancing the prognosis is better. There is always a limited capacity for exertion and at best the patient will not last long.

AGE AND SEX

The youngest in this series was 36 years of age and syphilis of the heart was the etiological factor. One of 37 years suffered with endarteritis obliterans and had had an amputation of one leg following gangrene. Eight were between 40 and 50 years, nineteen were in the fifties and the rest were above 60 years.

Thirty-four were males and thirteen were females.

RECENT NOMENCLATURE

Recently Oppenheimer and Wilson have published articles in which their conclusions change the present right branch block to left branch block and vice versa. White has adopted this nomenclature in his new book—"Heart Disease." It seems, they conclude, mistakes have been made in the location of the branch lesions in the human. This, however, does not agree with the human histopathological researches of Eppinger and Stoerck who in 1910 published electrocardiograms and the post mortem data in which lesions that completely divided the right bundle branch were demonstrated. The electrocardiograms were those of typical complete right bundle branch block.

This work has been confirmed by many others. I have the electrocardiograms of a complete permanent right branch block and at the autopsy a complete destruction of a section of the right branch was found.

It seems to me we have not enough evidence at the present time to accept the ideas of Wilson and Oppenheimer but must wait for more confirmatory evidence before changing the nomenclature in this disease of the bundle branches.

CONCLUSIONS

In this series of 47 cases with one sided permanent branch block 44 died within eighteen months after coming under observation. Three are still living and have survived five, four and three years respectively.

One sided branch block is a serious disease and in a large majority of cases carries with it a bad prognosis, since at the best the patient will seldom live over 18 months.

There is no clinical method by which the diagnosis can be made and since it depends entirely upon the use of the electrocardiograph it is probably often overlooked.

It is a disease of advanced years.

Since the prognosis in one sided branch block is so serious and since it is the result of heart disease it seems necessary, besides a complete physical examination, to employ the electrocardiograph in every case of heart disease.

—1001 Federal Trust Bldg.

CARCINOMA OF THE ORAL CAVITY*

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Carcinoma of the oral cavity ranks second in frequency to cancer of the uterus. Even though this form of cancer can be seen early and is easily accessible, it is one of the most fatal of all malignant diseases, with a mortality rate of 75 to 90 per cent. This great mortality rate is due, in large measure, to the failure to recognize the seriousness of precancerous lesions. The layman naturally pays little attention to these things. The dentists, who frequently see these lesions first, have not learned their seriousness. Even physicians, who are supposed to know, often temporize with the precancerous lesions until a frank malignancy has developed. As a result of all these factors, patients with cancer in the oral cavity usually are far advanced when referred to the specialist. In many cases they are inoperable with the scalpel and must be treated by other means. That there is hope of success even in the advanced case I purpose to show in this discussion.

Etiology: The three important etiological factors in carcinoma of the oral cavity are syphilis, tobacco and defective or artificial teeth.

Syphilis must be a chronic lesion in the mouth to produce cancer. Leukoplakia, which is sometimes syphilitic in nature, sometimes due to tobacco, must always be regarded as a precancerous lesion. Fournier holds that cancer occurs in 30 per cent of leukoplakia. Sooner or later the milky white patch will begin to thicken and become rough and indurated. When this change takes place those areas are definitely cancerous in character. The patient, not being aware of the seriousness of this change, neglects himself until the cancer cells have extended downward through the mucosa into the submucosal tissue and even into the bone. Usually a show of blood or aching pain in the jaw bring the patient to the physician. When this stage has been reached a serious battle is on hand if the patient is to get rid of the cancer.

Another danger in syphilitic patients is to think the lesion in the mouth due to syphilis alone. It is rather commonly observed that cancer of the mouth occurs in syphilitic patients. Both conditions need appropriate treatment in these patients.

Tobacco has a definite place in the cause of cancer of the mouth. Bloodgood says he has never seen cancer of the mouth cured in a patient who persists in the use of tobacco. My own experience bears this out. Buccal cancers frequently come where the quid is held. Repeated pipe burns on the tongue or lip irritate the mucosa and act as a cause of cancer.

Bad teeth with sharp projections or poorly fitted artificial dentures are frequent causes of cancer. I have frequently seen a sharp jagged tooth pressing into cancer of the tongue so deep that the impression of the tooth remained when the tongue was held away from it.

Of the same causative nature are chronic fissures and ulcers which are found in the tongue and about neglected teeth. Pyorrhoea pockets act in a similar fashion.

I have frequently seen cancer in the floor of the mouth caused by a poorly fitted lower plate which cut into the tissues under the tongue.

In patients already suffering from cancer of the gums extraction of the teeth frequently sets the growth on fire, causing it to grow very rapidly. One of the cases cited illustrates this point well. The tearing of the tissues during extraction seems to cause rapid growth in size and area covered by the growth.

Gross Appearance: That type of cancer originating on a leukoplakia base appears as an indurated flat ulcer with irregular margins. The induration extends deep, usually involving the full thickness of the gum and invades bone. When the bone is invaded the x-ray examination will frequently, but not always, reveal it. It is well to bear in mind that the bone invasion is always more extensive than the x-ray film indicates. This is due to the contour of the jaw bone making it impossible to get satisfactory films in both planes and that the x-ray does not reveal the invasion until sufficient decalcification has occurred to show on the film.

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*From the Department of Radiology and Physical Therapy, Creighton University Medical School.

In other carcinomas in the mouth, the growth is softer and cauliflower like, attached by a broad pedicle. These frequently spring from the gums between the teeth. Still others seem to arise from the floor of the mouth and for a time are covered with mucosa. Eventually these ulcerate and, from then on, grow very rapidly. Other cancers in the floor of the mouth develop where a poorly fitted lower denture has cut a slit in the soft tissues. This continues at first as a traumatic infected ulcer but later changes to malignant character and grows up around the margins and extends downward. The induration can best be detected by palpation with one finger under the tongue and one on the skin within the arch of the mandible.

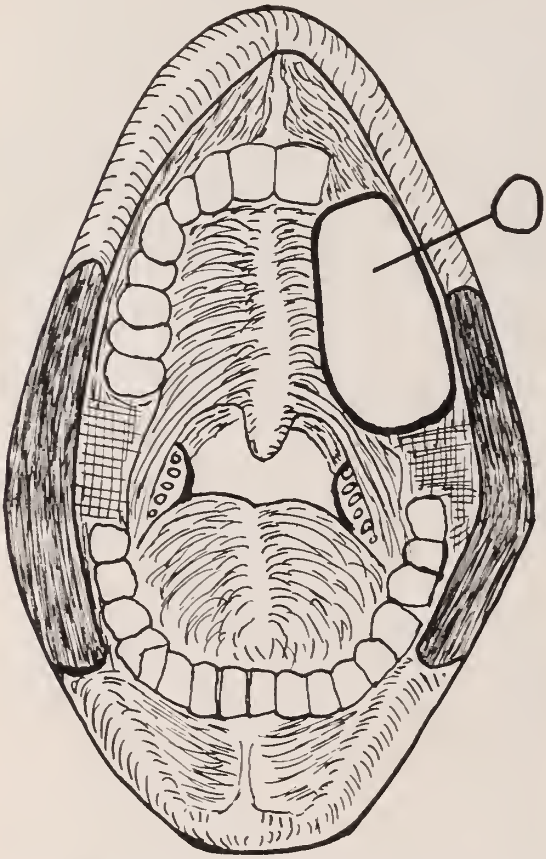

Fig. 1. Diagrammatic drawing illustrating the defect left after treatment of Case No. 25236. The cancer involved the gum, left half of the palate, the alveolar process and the floor of the antrum. All of this diseased tissue was coagulated and curetted away. The hole in the floor of the antrum -O- is closed by a plug of cotton which the patient changes as necessary.

Statistics by Meller indicate about ten per cent of the oral carcinomas occur in the tonsils.

Extension into the lymph nodes occurs early. Frequently this is the first thing noticed by the patient. On the other hand, very extensive growths occur in the mouth with no lymphatic involvement. The nodes affected are usually those directly draining the area but, at times, the anatomical rules are violated as in cases where lymph glands on both sides are involved when the lesion is definitely confined to one side.

Metastases to distant organs are rare but do occur. In 148 autopsies at the Middlesex Hospital, metastasses were found as follows: liver 8, lungs 7, pleura 4, adrenal 3, heart 2.

Treatment: Carcinomas of the oral cavity present the greatest difficulties in treatment. They early involve vascular structures, wide surfaces of essential organs and bone. Because of these conditions physical methods of treatment are especially valuable.

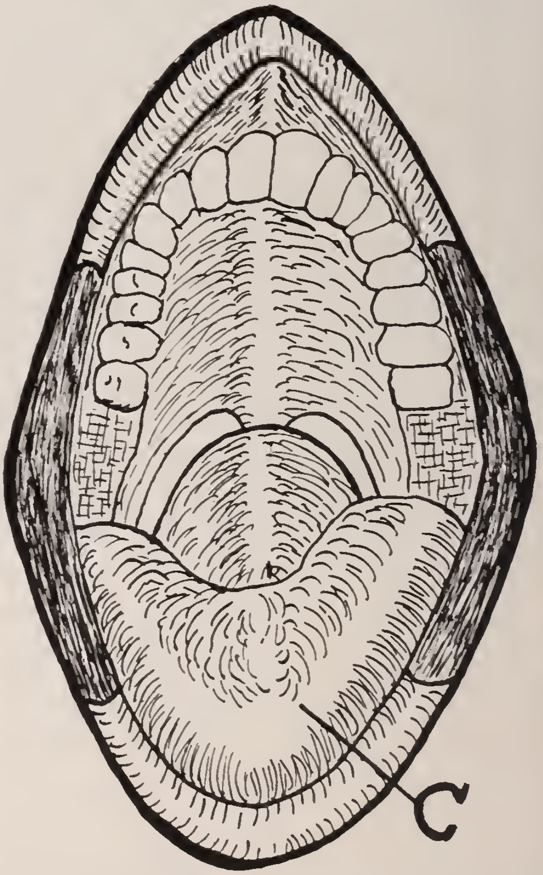

Fig. 2. Diagrammatic drawing of Case No. 37094. C—the extensive cancer filling the mouth so the tongue was pushed up against the palate and the lower lip greatly protruded. The mandible was invaded from molar to molar region. The diseased area was destroyed by bipolar coagulation and curettage. No bleeding occurred either during the operation or later.

Electrocoagulation: The use of electrocoagulation makes possible the destruction of wide areas of vascular tissue without the loss of blood. Coagulation must be accompanied with curettage, however, so the operator can determine when he has destroyed all diseased tissue. Omission of curettage is responsible for recurrences following electro-coagulation. Without curettage it is impossible either to estimate the depth of destruction or to visualize the irregular deep extensions of the growth. By this method the softened carcinomatous bone can be cleaned out too. Curettage should be carried as far as possible without bleeding, then coagulation should be repeated followed by more curetting.

Berven(1) of Stockholm, calls attention to the use of gamma radiation before coagulation. He stresses the rapid healing of electrocoagulation wounds of the mouth saying: "After about one week the wound is clean and after an additional three weeks epithelialization has occurred." Berven and Forssell's(2) end results in the treatment of carcinoma lead the world.

The usual method for producing coagulation is by placing a large indifferent electrode on the patient's bare skin at some distance from the operative field. The active pointed electrode is then placed in contact with the tissue to be destroyed.

In very vascular growths I have found a modification of the bipolar technique helpful. Instead of using an indifferent electrode at some distance from the site of operation I use two pointed electrodes both applied to the diseased tissue about 1.5 cm apart. By this method the current is short circuited between the two points. This gives very intense heat making it possible to coagulate vessels .5 cm in diameter, congealing the blood in the vessel. By moving slowly around the base of the growth, the entire mass is coagulated through the base. This coagulated mass is then curetted as far as possible without producing bleeding. Additional coagulation and curettage is done until all diseased tissue is removed. This technique is valuable in pedunculated growths making it possible to amputate the growth through the base without hemorrhage.

When one is dealing with a flat large diseased area on the cheek where special care is needed to prevent perforation, this technique is a great help. The maximum coagulation occurs between the two pointed electrodes, the depth of which can be accurately regulated.

Radium: A special technique for the application of radium using pure gamma rays has been of very great help in recent years. In this way very large dosage is possible without the after pain which results where needles are inserted into the tissue or where beta radiation is applied direct to the mucous surface. Special technique is used, the treatment requiring several days to finish. This treatment is of great value in selected cases alone or in combination with electrocoagulation. I have frequently been able to control recurrences by the use of gamma radiation.

Where the gamma rays of radium are used the prolonged application catches all the cells of the growth at some stage of mitosis. Regaud has emphasized the better results to be obtained by this technique. Pfahler(3) reported a series of oral cancers treated by this method with excellent results. The only objection to this technique is the great expense which prevents many patients from having access to it.

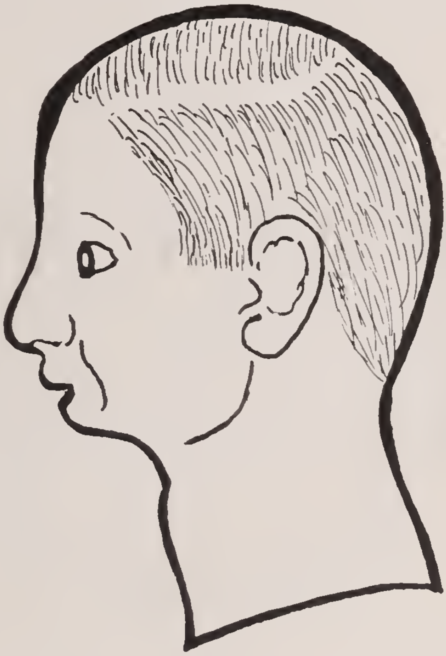

Fig. 3. Diagrammatic drawing illustrating the deformity resulting from treatment of Case No. 28997. Although the mandible is destroyed from molar to molar regions, the patient holds his normal weight and works as a garage mechanic. His speech is remarkably distinct.

High Voltage X-ray: In all cases where gamma radiation from radium is not used, high voltage x-rays are used. A field of proper size to cover all possible lymphatic areas is employed. The dosage is carefully estimated so as to get the proper percentage into the depth. Carcinoma requires 100 to 110 per cent x-radiation to produce its death. Sarcoma is more radiosensitive requiring 80 to 90 per cent of the erythema skin dose. The international standard r-unit is used in estimating the dosage.

Illustrative Cases: The following cases represent three different types of carcinoma of the mouth. In all of them extensive bone involvement was present. Appropriate treatment was given and the end results have been good.

SQUAMOUS CARCINOMA OF PALATE AND GUMS AND UNDERLYING BONE

Case No. 25236 Chas. A. This patient a white married male, 61 years of age, came October 1st, 1925, making the following complaint:

About two years ago he noticed a whitish spot on the inner side of the left cheek near the region of the molar teeth. Shortly after this he had the teeth extracted because the gums about the left upper molars were thick and irritated. After the gums had recovered from the extraction they were still thick, whitish in color and irritated. The whitish color now covered the inner side of the cheek, the gums and the left half of the palate. At various times this area was treated with acid and ultraviolet rays but with no improvement. During the past few weeks the spot became larger and quite painful.

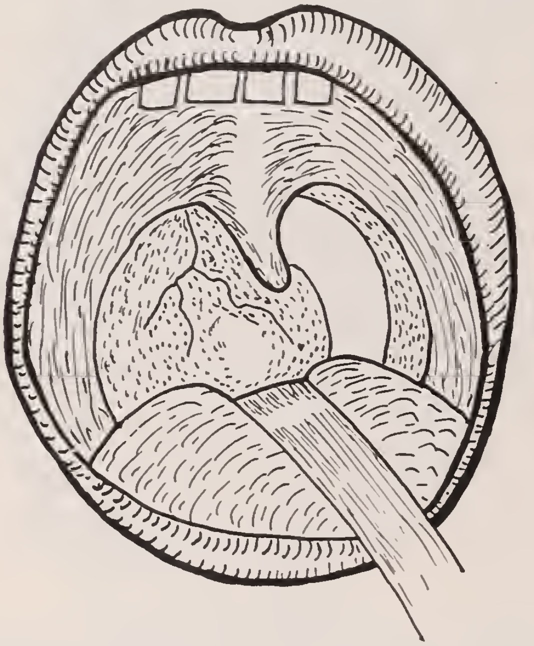

Fig. 4. Diagrammatic drawing illustrating rapid growing squamous cell carcinoma of tonsil Grade IV very radiosensitive.

EXAMINATION: Inspection disclosed a whitish patch covering the inner side of the left cheek and extending over the gums in the molar region and covering the posterior left quadrant of the soft palate. The gums and palate showed several small ulcers with fissures. Palpation revealed considerable induration and thickening of the mucosa of the palate and gums. X-ray examination showed an area of bone destruction in the left upper molar region.

DIAGNOSIS: Leukoplakia undergoing malignant degeneration with extension into the alveolar process.

TREATMENT: Under general anesthesia the entire area of involved soft tissue was coagulated with the high frequency electric current. After the soft tissue was curetted away the diseased bone underneath was coagulated and curetted removing the process in the molar region and the hard palate and floor of the left antrum, which were found to be diseased.

AFTERCARE consisted of frequent warm saline irrigations. The opening into the floor of the antrum was kept plugged with cotton which is changed after each meal. After healing has occurred the patient himself puts in and takes out the cotton plug. This simple method aids speech and eating.

The patient has remained free from the disease more than six years.

CARCINOMA OF THE FLOOR OF THE MOUTH

Case No. 28997 J. J. P. A white married male, 45 years of age, presented himself May 10th, 1927, with the following complaint:

About three weeks previously he noticed a swelling in the mouth under the tongue. On consultation with his family physician he was told he had cancer and that it could not be operated but might be helped by x-ray or radium treatment.

EXAMINATION: Physical examination revealed an ulcerated indurated area in the floor of the mouth extending from the left cuspid region around to the right first molar region. The right submaxillary glands were palpable. The blood Wasserman test and all other laboratory tests were negative.

DIAGNOSIS: Carcinoma of the floor of the mouth was made.

TREATMENT: Radium needles were inserted into the growth at proper intervals using 100 mg. hrs. per cubic centimeter of tissue. Supplementary x-ray treatment was given over both submaxillary regions. During the two months following this treatment the patient gained eight pounds in weight.

On August 27th, 1928, the patient came in with evidence of a massive recurrence in the tongue and floor of the mouth. At this time high voltage x-ray therapy was used. Improvement was noted but September 15th, 1928, a severe hemorrhage occurred. After this abscesses formed in the floor of the mouth, the mandible became involved in the growth and was gradually sloughed off, sequestrum after sequestrum coming out until the entire mandible from molar region to molar region was gone. When this process was completed the tissues assumed a normal appearance and the patient has remained well with no evidence of recurrence to date.

CARCINOMA FLOOR OF MOUTH AND MANDIBLE

Case No. 37094 Wm. J. The patient, a white single male, aged 63, came November 13th, 1930, with the following complaint:

About three months ago he noticed his lower front teeth began to bleed easily and the gums became thick. One month ago the teeth were extracted. Immediately a tumor began to grow very rapidly until now the lower lip is pushed forward and the tongue backward so he can scarcely talk or eat.

EXAMINATION: Physical examination revealed a bleeding cauliflower growth extending from the left lower molar region around to the right molar region crowding the tongue backward and upward and the lower lip forward. The tumor followed roughly the contour of the mandible and was attached to it. The floor of the mouth was filled with the mass.

X-ray examination revealed bone destruction of the alveolar process of the mandible from the left molar to the right bicuspid region. There was also destruction of the labial plate in the incisor region.

TREATMENT: Under general anesthesia the whole tumor mass was coagulated and curetted away until healthy tissue was reached. The mandible was deliberately cooked wherever disease was observed.

A nasal tube was passed, through which he was fed. Saline irrigations were used several times daily. The wound cleaned up and granulated in rapidly. At the end of five weeks, a sequestrum shaped like a lower artificial denture came off.

A slight recurrence appeared five months later which was treated in the same manner described above. The patient has remained well to date.

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PART I

SPINAL ANESTHESIA*

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This paper is based on a review of the available literature with observations in a personal series of three hundred and twenty-two cases operated for the most part during the past year. I am more and more coming to the use of spinal block as a routine and now insist on it in bad risk cases and in cases where respiratory complications are feared. Though the total number of cases is as stated I selected one hundred and twenty-five cases in which records were fairly complete and all operated in the same hospital and compared them with an equal series operated in the same hospital under ether. The age of the patients ranged from five to eighty-one years. I believe it is ideal for children and in them shall use it routinely in the future so far as possible. Babcock has used it in an infant of two weeks.

I make my lumbar puncture with the patient lying on the side on the operating table. With practice this is as easy with the patient sitting and is safer and more comfortable for the patient. The skin is cleansed with 70% alcohol and a skin wheal raised with novocain injected through a very fine hypodermic needle. The deeper tissues are then anesthetized. The lumbar puncture needle is rustless steel and twenty gauge. The puncture should be practically painless. I then dissolve the required amount of novocain crystals (Metz) in spinal fluid and reinject. For low abdominal operations one hundred mgs of novocain dissolved in two cc of spinal fluid is required if the operation is to last less than thirty minutes. For longer operations and for operations in the upper abdomen I use two hundred mgs of novocain and estimate that four to five cc of spinal fluid will carry the anesthesia to the nipples. If anesthesia of the thorax, upper extremities and head is required two hundred and fifty mgs of novocain is dissolved in six to eight cc of spinal fluid. Children require relatively more since the dose is dependent on the size of the sub-arachnoid space rather than the weight. An infant receives one-fourth to one-third the adult dose while a fifty pound child receives one-half the adult dose. The amount of spinal fluid determines only partially the upward diffusion of the anesthetic agent. The safest place to inject is below the second lumbar space where there is no danger of injuring the cord. I furthermore believe that if one is to attain proficiency in gauging the height of anesthesia he must always inject in the same interspace. After the injection the patient is placed in Trendelenberg's position. When returned to the room the foot of the bed is elevated for two hours. The foot of the bed is then lowered and the patient gradually elevated to a semi-Fowler position.

Preliminary medication consists usually of one-fourth gr. morphine and one two-hundredth gr. of scopolamin one hour before operation. Children receive correspondingly smaller doses. In a few cases I used sodium-amytal but discontinued it because an occasional patient becomes almost unmanagable after its use. But for this I would use it routinely.

The anesthesia produced can be depended on for about one hour. Sometimes it will last but forty-five minutes and again two hours. The size of the dose affects to a degree the length of anesthesia.

The history of spinal anesthesia begins with experiments of J. Leonard Corning(1) in 1888. Acting upon a false belief he tried to inject cocaine between the spinous processes. His results, however, indicate that at least part of his solutions were deposited in the sub-arachnoid space because of the fact that he obtained anesthesia in the lower extremities. His work thus antedated Quincke's lumbar puncture by three years. Sicard and Jaboulay made sub-arachnoid injections with various substances and published reports. It remained, however, to August Bier to establish the surgical importance of spinal analgesia. Using two mils of a one per cent cocaine solution he observed the effects of intrathecal injection on himself, his assistants and six patients. The method was first employed in America by Tait and Caglieri in the course of an ostectomy of the tibia performed on October 26, 1899. On December 10th of the same year Dr. Rudolph Matas did a hemorrhoid operation under spinal analgesia induced by injecting one per cent cocaine in the spinal canal between the fourth and fifth lumbar vertebrae. Tait and Caglieri in 1900 reported three cases in which a cocaine solution was successfully injected into the sixth cervical interspace. The toxicity of cocaine precluded a very wide use of the method in the early days. Beginning with the introduction of stovaine in 1905 the element of toxicity was reduced and a new impetus given. In a few surgical clinics spinal analgesia has been used without interruption since 1904. Notable among its exponents in America is W. W. Babcock, who has used it in more than twenty thousand operations and has been a guiding spirit in its sane usage.

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*Read before the Lancaster County Medical Society, Lincoln, November 3, 1931.

Physiologic action(2): Spinal anesthesia acts by arresting the power of conductivity in the spinal roots. There results from this, sensory loss and motor and sympathetic paralysis. The action is to a considerable extent selective. Thus there may be anesthesia without paralysis and there is frequently loss of pain sensation with retention of touch and pressure sensation. I have had anesthesia to the top of the head without unusual embarassment to respiration and in fact unnoticeable paresis of the upper extremities. This result occurs only in a small degree from the posterior roots being more exposed to the drug. Within a few seconds after the injection the patient experiences a numbness or tingling in the feet. These sensations gradually spread and are followed by anesthesia, paresis and paralysis. In two of my cases the patients for several minutes complained of severe pain in the knees. The first of these was in a knee that had for many years been ankylosed. Due to the fact that the inhibiting sympathetics are paralyzed while the motor autonomics are largely untouched the intestinal tube shows active paristalsis. If the upper dorsal segments are involved nausea usually occurs. I have, however, seen nausea when the anesthesia extended no higher than the umbilicus and have questioned whether or not it may be the result of anoxemia. To quote Temple Fay(3), "Circulation must reach these tissue cells not only with nutrition values but with oxygen, which must be maintained at an oxygen tension of approximately twenty mm Hg. Thus at sixty mm Hg. (MacLeod) blood may be nearly saturated with oxygen, whereas at pressures below fifty mm it readily loses oxygen, so at ten mm there is complete reduction. When diastolic pressure reaches forty the oxygen dissociation curve has reached a point where oxygen on the red cell is no longer available when it reaches the capillaries and thus anoxemia may be present even though the red cell passes close to the tissue requiring its normal supply of oxygen." As a result of the fall in blood pressure the secretion of urine is distinctly dimminished. Incontinence and retention do not occur as a result of the anesthetic. The blood pressure is lowered because the vaso constrictor sympathetics are paralyzed and the peripheral resistance lowered, the heart is slower and the right auricle fills slowly because respiration is reduced and the normal aspirating influence of the venae cavae diminished. Respirations are slow and shallow. In one of my cases they reached two or three a minute and so shallow as to be hardly perceptible. Respiratory paralysis seems quite possible. "If a solution of stovaine be placed on the floor of the fourth ventricle of a dog respiration is arrested." (Babcock).

During labor, uterine contractions continue unchecked under spinal anesthesia. "Hemorrhage during delivery or curettement is distinctly less than under chloroform or ether." (Babcock). There is no evidence that novocain has any local action on the spinal cord. The injection does, however, produce changes in the spinal fluid. The chlorides and sugar are increased and very frequently the cell count rises (4), one as high as eight hundred per cubic millimeter having been recorded.

Experimental evidence indicates that in spinal anesthesia, so far as the circulation is concerned, the initial change is in arterial pressure and the venous return and output of the heart are affected secondarily(5). This is the reverse of what occurs in hemorrhage in which condition the cardiac output decreases first and is reduced a third to a half before there is a significant decline in arterial pressure. This probably explains the clinical fact that a low blood pressure due to hemorrhage is much more serious than a similar blood pressure in a patient under spinal anesthesia.

In one anesthetic reaction McMullin reports a patient pulseless and breathless. In dissecting a vein for injecting normal saline not a drop of blood was seen. After giving three hundred cc of the saline containing one per cent adrenalin the pulse became perceptible and respirations returned.

Those who fear spinal anesthesia seem for the most part to worry about upward diffusion of the solution and a resulting paralysis of respiration. Koster and Kasman(10) exposed the medulla and cervical cord of frogs and guinea pigs and directly contacted these parts to the action of relatively strong solutions of novocain without producing noticeable effect on respiration. By applying novocain solutions to the sciatic nerve one may block passage of impulse along the sensory fibers while leaving motor fibers open to the passage of impulse. Many other investigators have found a similar difference between motor and sensory nerves. Here again it should be emphasized that spinal anesthesia is a root block and not a cord or medullary anesthesia.

Respiration apparently depends on a motor medullary center. With these facts in mind many surgeons have purposely produced upward diffusion of the drug with whole body anesthesia without unusual respiratory symptoms.

I have given up the use of adrenalin or ephedrin in connection with spinal anesthesia. The following quotations from Cushing are pertinent: "On intravenous injection of adrenalin a very marked rise in the arterial blood pressure occurs . . . for the most part due to constriction of the vessels of the abdominal cavity. After moderate quantities of adrenalin the blood pressure falls again after about five minutes. The sudden increase in pressure is obviously due to direct action on the muscle of the vessel walls or on the terminations of the nerves in them. The intravenous injection is followed by immediate cessation of the movements of the stomach and intestines which become relaxed to their full extent. The pyloric, ileo-colic and internal anal sphincters are thrown into contraction by adrenalin." One, therefore, with these drugs gets a fleeting and I believe unnecessary action on the vascular system and an altogether undesirable action on the gastro-intestinal tract.

In the first fifty cases I gave ephedrin and I was disappointed to find that patients complained as much or more of gas pains than they did with ether or ethylene anesthesia. I cautioned the nurses in charge to watch this more carefully and report accurately their impressions on the next fifty cases. They, of course, brought in the same report as before. I then decided to eliminate the ephedrin and have found that the complaints from gas pains and distention are decidedly less than before and considerably less than with other anesthetics. I, therefore, no longer use ephedrin or adrenalin but control the unpleasant symptoms incident to a drop in the blood-pressure with oxygen and carbon-dioxide.

Indications and contra-indications: The indications for spinal anesthesia vary greatly with the temperment, experience and skill of the operator, the site of operation and the pathology of the patient. If the surgeon is one who relieves himself of much responsibility by censure of the anesthetist this method will not appeal to him for with it he accepts practically the entire responsiblity. That its applicability is also measured by the experience of the operator is strongly evidenced by a review of the literature which shows a high percentage of unfortunate results from clinics where spinal is only occasionally employed. It is unfair to the method and grossly unfair to the patient for the surgeon to employ spinal anesthesia only in those cases where he considers other anesthetics too dangerous.

Turning now to the patient. Patients with respiratory disease should not be given inhalation anesthesia and where the operation cannot be done under local there is a prime indication for the spinal. If hypertension is present spinal anesthesia does no harm and may be an actual benefit(1). In cardiac disease, especially if there is decompensation, spinal block gives the heart a rest while the operation proceeds. I have operated on many cases with a systolic blood pressure of less than one hundred mm hg. and no longer consider hypotension a contra-indication. The small amount of the relatively non-toxic drug used produces no changes (so far as I know) in the parenchymatous cells of the brain, kidneys, liver or pancreas. In organic disease of the liver or kidneys it may, therefore, find a useful niche. It probably should not be used in organic disease of the central nervous system because symptoms which might follow would probably be blamed on the anesthetic rather than the disease. It should be stressed. however, that we are dealing with a root block and not a medullary or cord anesthesia. Autopsy findings after death under spinal anesthesia are usually not characteristic. Van Lier demonstrated swelling of the nucleus and the assumption of a peripheral position after spinal anesthesia. Spielmeyer also found lesions in the anterior horn cells and ganglion cells consisting of chromolysis, dissolution of nissl bodies and nuclear membrane and rounding of the cell bodies. He reasoned that this was not attributable to the toxic effect of the drug but was the result of the circulatory disturbance following cessation of respiration. It should be remembered that postmortem changes similar to these frequently take place in nerve cells and as microscopical examination of the cord is seldom made at autopsy we have no proof of the fact that the changes reported above are not common postmortem changes. It is worthy of note, however, that twelve hundred mgs of novocain have been injected without untoward result and this is six times the dose I usually employ. In metabolic disorders spinal anesthesia finds a useful place. This is particularly true in diabetes where the preceding regimen may be followed with little deviation. I have done prostectomy and hysterectomy on diabetic patients under it and have practically no change in the blood sugar in the days following operation. The site of operation influences me strongly in choosing the anesthetic agent. I believe that unless specially contra-indicated it is the best anesthetic agent for use in abdominal operations. It gives more complete and dependable anesthesia than any other method. Peristalsis is active, the sphincters are relaxed, relaxation of the abdominal wall is complete, the bowels do not protrude, breathing is quiet and the surgeon may quickly and without trauma do his very best work. It is urgent in intestinal obstruction and if the condition is due to ileus within approximately twenty minutes gas will be passed. In the presence of peritonitis I believe spinal block should be employed because of the minimum trauma necessary even if the Trendelenberg is necessary. A few hours after operation the patient may be gradually elevated to Fowler's position. Albee and Fry comment favorably on its use in bone and joint surgery. They say complete paralysis of the muscles is produced and the limitation of movement due to adhesions or malformations stand out clearly and that a hemostatic effect is noticeable in the field of operation. They think its use is limited to the lower half of the body, to adults and patients not too nervous. Their concluding statement is worthy of repetition: "All in all, the more I see of spinal anesthesia, and the more I weigh it in my mind, the more convinced I am that it has a wide use in orthopedic surgery in spite of its necessary limitations. It has passed the experimental stage and awaits only that perfecting which advancing knowledge brings to all branches of medicine."

I have had no experience with root block in surgery of the chest, upper extremities, neck or head and I quote freely from Koster and Kasman who have employed it in such cases to the number of more than seven hundred and fifty. "In empema it is of considerable value. With local anesthesia a rib may be resected with facility, but almost always when the cavity is opened to drain off the pus, no matter how slowly the latter is allowed to escape, there is a very distressing and sometimes dangerous dyspneic period. This is avoided entirely when spinal block anesthesia is used." In complete body anesthesia it is interesting that there is not motor paralysis of the muscles of the upper extremities or head. This facilitates the repair of lacerated tendons. These operators also use it in operations on the thyroid, face and head, calling attention to the absence of distortion locally which accompanies infiltration and to the safety of the method. One of our oldest and still most active surgeons in Nebraska, John E. Summers of Omaha, has used it extensively and I understand with satisfaction in all operations of the upper body, neck, etc.

(To be concluded in next number.)

URETERAL CALCULI*

Treatment and Results in 100 Consecutive Cases.

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In the whole realm of surgical procedure there is today no type of problem which calls for such a nicety of judgment in its handling as that of ureteral calculus. The history of ureteral calculus dates far back into ancient history. Recorded examination of 9000 Egyptian mummies shows many with calculus disease of the urinary tract. There is no recorded evidence, however, of surgical procedure ever having been instituted. Clinical recognition, according to Olympies of Athens, did not, however, take place until the eighth century. Ultzman states that about this time in history cutting for stone had evidently taken place, although the first real operation for any urinary calculi is accredited to Pierre Franco in about 1560.

Surgical treatment for ureteral stone is, however, a relatively modern procedure. Bardenhauer of Vienna is said to have performed the first uretero lithotomy in 1882. It remained for the distinguished Tuffier of Paris to really develop the technique in 1888. The method practiced was that of a single incision in the longitudinal axis of the ureter, removing the stone and suturing the opening. That this procedure was not extensively practiced is evident by the researches of Jeanbrau, who, in 1909 found only 172 recorded cases of ureterotomy. In 1912 Isreal of Berlin reported a series of 61 operated cases. Following Isreal's publication the development of ureteral surgery, particularly that for stone, was very rapid and soon became a definite part of our surgical technique.

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The development of the cystoscope devised by Nitze in 1880, the introduction of the ureteral catheter by Albarran, and the establishment of urographic technique by Volka and Lichtenberg established the basis for the modern treatment of ureteral stone. Such procedures have greatly reduced the surgical attack on the ureter, the economic advantage of which can hardly be over estimated.

In 1908 Kapsammer, a progressive Viennese urologist, remarked before one of his classes that it would only be a question of time until someone would devise a ureteral cannula or catheter that would cast into oblivion most of the surgery of the ureter. That this has materially come to pass is only too well evident by the results which are achieved by the urologist with graded catheters and more recently with the various types of dilators and stone dislodgers.

LOCATION

An exhaustive review of the literature on ureteral calculi shows that about 76% were found in the lower third of the ureter. The former teaching that calculi are prone to locate at the natural constrictions of the ureter I believe to be incorrect. By location I mean impaction. Such calculi may impact anywhere. The lower third of the ureter is quite well protected by constricting muscle, which accounts for the frequent location of stone in this region. This includes the intravesical or that portion which is in the wall of the bladder. It has been demonstrated that stones drop readily from the renal pelvis into the more constricted lower third of the ureter. However, at times even very small stones become impacted in the upper ureter. Multiple impacted stones are not common. A review of 500 cases from various clinics shows multiple impaction only in 21 cases.

DIAGNOSIS

The most difficult cases to recognize are those in which we do not find a typical history. A review of the 100 consecutive cases herewith presented shows that the atypical type is distinctly more frequent. About 80% of ureteral stones will show clearly on a plain x-ray film, not infrequently, however, such shadows cast on a plain film leave one at a loss to tell definitely whether or not it is a stone in the ureter. A roentgenogram with an opaque catheter in situ is helpful, but not entirely conclusive. In 1922 Bransford Lewis demonstrated that if an exposure was made with a soft catheter in the ureter and a second exposure with his ureteral dilator in place the shadow would follow the dilator, provided the calculus was in the ureter. In 1918, Ball of the Presbyterial Hospital in Chicago suggested the double exposure method. Such procedure is now extensively employed by urologists. In case of a possible ureteral calculus an x-ray catheter is planted in the usual way. The tube is then moved about 2 inches off center or inclined slightly and a second exposure made. When the stone is in the ureter it follows the ureteral shadow, or in other words appears in the same relation in both exposures.

The extent to which ureteral stone is mistaken for appendicitis is by no means a credit to surgery. Scars over the appendix in these cases with a history of no relief of symptoms following operation is very common. These 100 cases of ureteral calculus reveal that 15% have had their appendices removed, and I am discounting those cases wherein there is a complex of a probable acute appendicitis necessitating emergency appendectomy. One of the reasons for this diagnostic error is probably the frequency with which calculi become impacted close to the bifurcation of the iliac vessels in the vicinity of McBurney's point. A careful scrutiny of the presenting symptom complex with accurate urinary findings should arouse the surgeon's suspicions. If doubt exists a complete urological examination will decide the point. This particular section should not be left, however, without reminding you that an acute appendix and ureteral stones are at times co-existent. Judd's dictum that in a female the diagnosis of ureteral stone particularly in the lower portion of the ureter can frequently be made by vaginal palpation should not be overlooked. In the present series of cases, however, I have been able to verify Judd's statement by palpating the stone in the lower ureter in only one case by the vaginal route.

TREATMENT

What technique shall be employed in the management of ureteral calculi? The methods of treatment can be divided into manipulative and operative. But before either method is instituted one must weigh with careful understanding the factors underlying each case.

Thomas of Minneapolis has formulated the indications for operative procedure as follows:

1. When the ureteral stone is large, that is, usually more than 2 cm and progress through the ureter has stopped.
2. When the kidney pelvis is being distended.
3. When reflux anuria occurs.
4. When other diseases contraindicate long attacks of pain.
5. When a patient cannot withstand, without severe reaction, cystoscopic manipulation.

These criteria I believe to be sound principles for considering operative approach and which have been followed with a great amount of satisfaction.

When an examination shows that a patient cannot be grouped in the classification noted, what should one do? What methods of treatment are at the disposal of the urologist? Bransford Lewis in 1904 demonstrated that the simple passage of a ureteral catheter will sometimes dislodge the stone. Braasch and Moore believe that it is the change of axis which allows the stone to descend. Crowell and others believe that the injection of lubricants through the catheter above the stone is at times of value. I feel with most urologists that it is the passage of the catheter which does the work.

Beer has demonstrated the great value of the indwelling ureteral catheter and reports about 60% of successful cases. Peacock reports 50%, Crowell 65%, Downmashkin 70%, Walther 88.9%, and Ballinger & Elder 90% of stones removed by catheter and bougie manipulation. In the present series of 100 consecutive cases reviewed here, 74 were removed by ureteral manipulation. Following the experimental work of Illievitz on dogs, Downmashkin dilated the ureter of human beings to 20 with rubber bags. I have done the same with bougies and flexible endovesical instruments.

Undoubtedly dilators and many of the new fangled stone dislodgers have a place in the manipulation of ureteral calculi but none of these agents can be given place sine qua non over ureteral catheters and bougies. It is my practice to introduce a catheter or bougie to the location of the stone and by means of gentle manipulation, if possible, the tip is worked by the stone. There is no danger if care is used. Once the catheter is by the stone pressure holds the instrument in place and an attempt is made to manipulate one or two more catheters alongside the stone. These catheters are left in situ in the ureter providing drainage is adequate, for from twelve to twenty-four hours, and then removed. It makes no difference if you are in the lower portion of the ureter or near the kidney pelvis, the procedure is the same. This type of procedure certainly represents a big advance in the possibilities of the stone removal. In the event of inability to get by the calculus, progressive dilitation with bougies or bulb dilators must be employed. Beginning with the largest size bougie possible, the ureter should be dilated up to size 12 or 14 at weekly intervals. Such dilitations are carried up the ureter to the stone dilating the ureter below its resting site. On a few occasions I have carried such dilitations as high as size 20. Attempt is made at each dilitation to get by the stone with a catheter or bougie, and when this is accomplished I leave as large a catheter as possible alongside the stone for drainage purposes, removing it the next day and usually find the stone follows soon thereafter. Or, occasionally the stone will appear in the ureteral orifice upon withdrawing the dilating instrument from the ureter. The ureteral orifice sometimes offers difficulty to the passage of the stone, thus necessitating cutting with some endovesical instrument. The ordinary flexible endovesical scissors are worthless unless such instrument carries the filiform guide such as devised by Bumpus. However, the most satisfactory method is a ureteral meatatomy with a cutting instrument which cuts with the diathermy current.

I am certain that causes of failure in ureteral dilitation lie in the fact that such dilitations are not carried high enough. The ureter is much less sensitive than supposed, and can readily be carried to size 20.

In any given case of stone, how long shall dilitation be continued? There is no definite time limit although in certain clinics it is arbitrarily limited to six months. The real answer is judgment—if judgment dictates that results can be obtained, continue to dilate; if it is palpably a stone which will not pass upon dilitation, then resort to operative removal. Does long continued dilitation have any ill effect upon the ureter? This can be answered best by saying that no ill effects have ever been noted in the middle and upper ureter, but in the manipulation of stones in the lower ureter it will be noted at times that the meatus and ureter are quite immobile from ureteritis. There is danger here. The danger of absolute impaction above a rigid meatus calls for serious thought. The most serious type of systemic reactions may be encountered here and

I accept it as a wholesome dictum that such cases offering any appreciable difficulty of an inordinate nature should not be further manipulated but subjected to immediate operative interference.

The following table presents the results in 100 consecutive cases:

Location of Stone		Passed with Instrument	Operative Treatment	Discontinued Treatment	Under Treatment
Upper third of ureter	22	16	6 (1 nephrectomy) (1 bilateral)	1	0
Middle third of ureter	23	20	1	2	0
Lower third of ureter	55	38	16 (1 bilateral)	1	0
	100	74	23	4	0

In the treatment of ureteral stones one should not allow himself to become hide bound by any set of rules. If dilitation will not succeed, ureterotomy is the only recourse.

In handling this type of case the surgeon must constantly be on his guard for signs of suppression of urine or an acute pyelitis. This may at once change the whole aspect of the case and demand immediate ureterotomy. Close observation of the urine and an eye on the blood chemistry for increasing nitrogen retention are of the utmost importance.

SUMMARY

1. Ureteral calculi are usually the result of obstruction plus infection.
2. Many calculi will pass through the ureter without recourse to treatment, but many will likewise became impacted in the ureter.
3. The most frequent point of impaction is in the lower third of the ureter.
4. A calculus once impacted may shut off the flow of urine, but does not necessarily do so on account of the presence of a drainage groove in the stone.
5. There is a predominance of ureteral stones in women.
6. Hematuria and pyuria are present in almost all cases.
7. In about 95% of all cases the calculi are solitary.
8. Ureteral dilitation should always be tried where there is not a marked pyelonephritis present, or other indications do not exist.
9. Dilitation of the ureter has been found successful in about 75% of the cases.
10. Dilitation failing, extraperitoneal ureterolithotomy is the operation of choice.

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CONTACT GLASSES

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The improvement of vision in certain types of irregular corneal astigmatism, such as conical cornea, has been possible only to a slight degree, if at all, by the use of ordinary lenses. In recent years, however, marked restoration of vision has been obtained by the use of contact glasses. As early as 1887 Dr. A. E. Fink had advocated their use in conical cornea. The manufacture of such a glass presented many difficulties, for the curves must be mathematically exact and the edges and surfaces so carefully rounded and so finely polished as to be tolerated by the eye.

At first, efforts were made to produce these by blowing, and some, especially by Muller of Wiesbaden, were in isolated instances very successful. However, they could not be repeated with any uniformity. Attempts to mold glass and other material into the necessary shape proved unsatisfactory. Messrs. Zeiss of Jena have quite recently produced a ground glass which has surfaces based on accurate optical calculations and yet it is very light and highly polished.

Since this time the use of contact glasses has steadily increased and we feel that a description of them, their uses and the procedure used in their prescription is timely.

The type now used (fig. 1) is a thin hollow glass bowl with a rim of different radius (contact ring) which fits on to the anterior part of the eyeball beneath the lids, in contact with the sclera but separated from the cornea by a fluid meniscus. It is made from crown glass which has a high refractive index so that it may be very thin. It also is chemically highly resistant so as to withstand the corroding action of tears because it is well known from experience with artificial eyes that tears cause erosion of the glass. The central or corneal part is approximately 12 mm. in diameter and is the optically effective portion; the peripheral brim or scleral portion has no optical power but forms the adhesive area between the sclera and glass. The total diameter is about 20 mm. and the total weight 0.5 g. (grs. 7) which is so light as to cause no impediment to ocular movements.

The optical power of the contact glass is due to the fluid meniscus between the inner surface and the cornea. This fluid meniscus annuls the optical properties of the cornea. Since astigmatism is practically always corneal except in later years when senile changes occur in the lens, a contact glass practically abolishes astigmatism. Hence the fitting resolves itself into the selection of a glass by which the posterior focus of the combination (contact glass plus fluid meniscus plus ametropic ocular system) is at the fovea of the retina.

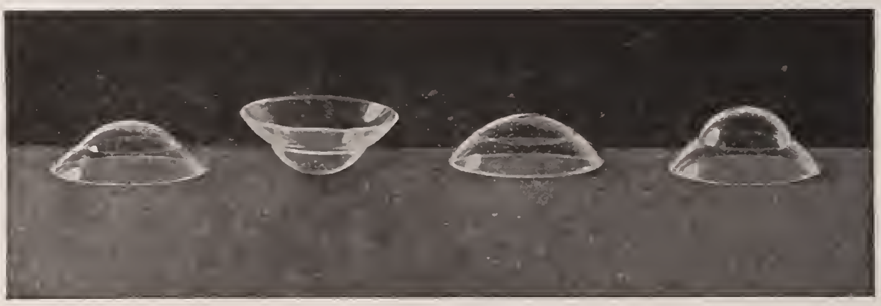

Fig. 1. Zeiss Contact Lenses.

The selection of the contact glass is made from a trial set of test contact glasses made by Messrs. Zeiss. The complete set is grouped into series according to the radii of the inner scleral curvatures; i. e., 11. 11.5, 12, 12.5 and 13 mm. In each of these series the inner corneal curvature varies from 5 to 11 mm. in ½ mm. steps. The measurements of the inner corneal and scleral curvatures are etched on the rim of each glass. Any of these lenses can be obtained in three shades of tinted glass which absorb 25, 50 or 75%.

The solution used for the meniscus is normal saline (0.9 per cent). This is practically isotonic with tears and has approximately the same index of refraction as the cornea.

The actual examination is tedious and usually requires several consultations. The eyes are first examined in the usual way to determine the amount and character of the refraction, and then the selection of the proper contact glass is undertaken. The conjunctiva is anesthetized with 1% solution of holocain or a 2% solution of butyn. The use of cocain is avoided because it dilates the pupil. For applying the glass to the eye a rubber sucker has been devised, which is similar in shape to a medicine dropper. When this is pressed against the convex surface it adheres tightly, but is easily released by pressure on the rubber bulb. The glass is held horizontally by this applicator and the bowl filled with warm normal saline by a dropper or pipette. The patient then leans forward until his face is horizontal, and while the lids are held open and he is looking directly at the center of the glass, it is carefully apposed to the cornea, the lids released so as to cover it, and the applicator released.

It is not an easy matter to prevent spilling of some of the fluid because the glass is not held horizontally or because the patient squeezes the lids with the result that an air bubble is present between the cornea and the contact glass. If this occurs it is necessary to remove it either by manipulating the lids or inserting a small spatula or hook under the edge so as to break the cohesion of the scleral rim. At times it can be dislodged by re-applying the sucker and gently rocking until one edge is freed.

The first determination is the selection of the one with the most accurately fitting scleral rim. This can only be done by trying one after the other until one is found in which there is a complete zone of adhesion near the limbus. This is very important since the comfort of the patient depends entirely on having the proper scleral curvature. The extent of the adhesive zone can quite easily be seen with oblique or focal illumination with a condensing lens and a loupe.

After the scleral curvature has been determined there remains only the correction of the ametropia. From this series a glass of large or small corneal curvature is selected for myopia or hyperopia respectively, according to the patient's refraction. When the glass giving the best distant vision has been determined, it is placed on the eye and the patient is tested with spherical lenses in a trial frame to see if further improvement can be obtained. However, it has been found that additions above four diopters make the lens too heavy. In case the vision is improved with spherical lenses the distance between the vertex of the contact glass and the back of the sphere in the trial frame is measured with a special millimeter scale.

This gives the necessary data for writing the prescription; i. e. (1) the scleral radius, (2) the corneal radius, (3) the amount and sign of additional correction and (4) the distance between the contact glass and lens.

After the proper glass is selected the patient must have thorough instruction and supervised practice in inserting and removing the glass. At first it should be worn only a few hours, gradually lengthening the time until it can be worn all day. It must always be removed at night. Many apparently cannot go over three to six hours even after a long time. Presbyopes need another pair or spectacles with the proper addition, but since the reading correction is seldom over 2.5 diopters, the glasses will be very light.

The eye fitted with a contact glass gains in monocular perspective, binocular fusion and increased field of vision. With ordinary glasses, myopes have a limited visual field and range of ocular movement but with contact glasses these are fully restored. They are also quite inconspicuous and should appeal to actresses for wear on the stage.

Contact glasses are probably of greatest value in correcting visual defects in cases of irregular corneal astigmatism. Because with the corneal astigmatism nullified by the fluid meniscus, simple spherical corrections give improvement of vision unattainable in any other way. These glasses are also of use in cases of diffuse interstitial haze, scattered nebulae and definite keratinization of the cornea.

In albinism, especially when they are tinted, they often relieve certain symptoms such as defective vision, photophobia and even nystagmus. They have been used with good results in many varieties of keratitis; inflammatory, neuroparalytic, and degenerative. A continuous application to corneal ulcers can be made by smearing its inner surface with an ointment. In plastic operations of the cornea they are valuable for maintaining grafts in position.

They are not suitable for squint cases although theoretically prisms could be incorporated in the glass.

They are of value in certain sports such as swimming where glasses cannot be well worn. In speed racing on land, sea or air, they protect the cornea from wind, and when tinted, from glare, with the added advantage that fog or rain cannot condense on them.

In certain instances they cannot be worn for some eyes are so deformed that a spherical glass cannot adhere to them and some patients are so sensitive that they cannot get accustomed to wearing them.

While the use of contact glasses may be regarded as still in the experimental stage, yet they certainly offer many possibilities and in the future will no doubt find increased application.

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AGRANULOCYTOSIS ANGINA

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The clinical syndrome of agranulocytosis as described by Schultz in 1922 is as follows. A sudden onset with high fever and severe general weakness. Ulcerative and gangrenous processes in the pharynx and larynx, the soft palate, the gums, the mucosa of the mouth, the gastro-intestinal tract, and the genitalia. There is no general hemorrhagic diathesis. The spleen is slightly enlarged. Icterus of a mild grade is frequently present. The principal characteristic is a high decrease of the leukocyte count. As low as a few hundred. The differential count shows the neutrophiles are reduced almost to zero. The total number of lymphocytes is decreased but "percentially" increased. The red blood picture in the onset is unchanged, the cells being normal in number, size, shape and hemoglobin content. The platelets are uneffected.

Another important fact is the absence of glandular enlargement in the majority of cases. And if there is any change it is slight. Ulcerations of the gastro-intestinal tract are usually latent and only when exceptionally numerous characterize themselves by a foetid diarrhoea.

Microscopic examination of the bone marrow reveals a marked reduction of the granulated elements. The myeloblasts are few while the megakaryocytes are present in sufficient numbers.

In the region of necrosis only lymphoid cells are found.

The affection as a rule runs a fulminant course and terminates fatally. The acute character differentiates it from the aplastic anemia as well as the absence of the hemorrhagic diathesis.

Walther, *Munch. Med. Wochenschrift,* considers agranulocytosis not an independent disease. But that it is a phenomena of a general bacterial infection on the basis of an individual predisposition. He found seventy-nine cases in the literature. Twenty-five cases had severe infections previously. Four had had operations. In fifteen other cases there had been a feeling of sickness. In thirty-five cases no antecedent history is mentioned. In twenty-eight cases out of the seventy-nine, streptococcus, staphylococcus, pneumococcus, and *B. coli* were found. In fifty-one bacterial examination was negative.

Stocks, *Folia Haematology,* reports that no specific infectious organism could be found in the cases of agranulocytosis. But that we have to deal predominately with a definite reaction of the organism dependent of the type and virulency of the infective agent. We may state, therefore, that a number of cases of aggranulocytosis are conditioned by a primary septic infection. We are of the view that we have to deal not with an independent disease but with an abnormal course of a septic infection.

Brogsitter and Von Krese, *Virchow's Arch. f. Path. Anat.,* conclude that agranulocytosis is not the result of a specific infection. We do not deal here with independent disease pictures but with conditions of severe intoxication resulting from infection.

At present we do not know all the conditions which may lead to a change in the blood. Also the fact that the morphology of the blood reaction in the same case of agranulocytosis undergoes considerable variations indicates that we do not deal with an independent disease but with a disease symptom.

Oppikoffer, *u. s. Allgm. Pathology,* summarizes as follows: "Disappearance of the granulocytes is uniform in the vessels and the tissues of the entire body. It is due to the injurious influence of a still intangible toxin upon the myeloblasts of the bone marrow. This damage is revealed through the most variated forms of degeneration, due to necrobiosis. The characteristic bone marrow picture supports the assumption of an essential agranulocytosis. The spleen presents a plasman cellular reaction in the absence of a local leukocytosis.

The anatomico-pathological characteristics consist of three essential points.

1. A change in the bone marrow relating exclusively to the granulocytic system.

2. The extreme rarity or absolute disappearance of polynuclears which is the logical corollary.

3. The diffusion and the importance of ulceronecrotic lesions involving the buccal, the pharyngeal and laryngeal mucosa, the respiratory mucosa, the digestive mucosa and the genital mucosa, there is nothing characteristic about the alterations of the other organs.

Clinically it has been divided into three forms. The subacute, the acute and the superacute.

According to its symptoms:

1. Forms simulating noma, typhoid, influenza, infectious endocarditis.
2. Jaundiced forms and non jaundiced forms.
3. Frustrated forms when the buccal pharyngeal lesions are at a minimum and the lesions are located in the digestive tract or on the vaginal mucosa, and not discovered till autopsy.
4. Anginous forms (lesions at onset show different aspect).
    - Resembles Vincents angina.
    - Tonsillar abscess.
    - Ulcero-membranous stomatitis.
    - Pseudo diphtheric lesions with absence of Lofler's bacillus.

DIFFERENTIAL DIAGNOSIS

From progressive sepsis with leukopenia, because of its lack of anemia, hemorrhagic diathesis and diminution of erythrocytes and platelets. This distinction is probably applicable only in the acute and superacute cases.

From aplastic anemia in its lack of hemorrhagic diathesis, pallor and injury to the erythropoietic system as well as in the normal red cell and blood platelet count.

From acute myeloid and lymphatic leukemia in the lack of pathological cells in the blood.

From influenza the absence of epidemic and contagion and the typical pulmonary conditions found upon section.

So far as acute leukemia is concerned a diagnosis during life between the so-called leukemic type of lymphatic leukemia and sepsis with granulocytosis is not possible.

Agranulocytosis masked under the clinical appearance of other diseases is reported. Farmakadis, *Presse Medicale,* reports six cases that clinically resembled diphtheria. Loffler's bacillus was found in only one case although all had membranes present in the throat. These cases were all given huge doses of diphtheria antitoxin, the lowest being 150,000 and the highest 240,000 units. Of these six cases one died. Whether these huge doses of antitoxin stimulated the bone marrow into activity is problematical.

Peritz, *Zentralblatt fur Chirurgie,* reports a case under the clinical syndrome of cholycystitis. The patient was transfered to the hospital under what appeared to be an acute gallstone colic attack. The third day after her admission to the hospital her temperature went to 104 and a leukocyte count of 3,000. The following day the count went to 800. The post mortem confirmed the diagnosis of cholecystitis and small necrotic areas were found in the hepatic parenchyma.

Cases of apparent recovery have been reported. Improvement was noted as early as the fourth day and some as late as the fifth week after onset. In these cases the temperature falls, the general condition improved, the ulcerations healed. These patients find themselves in an allergic state towards infection. Suppurations of the ear and the glands are frequent. During the interval of apparent health the leukocytic count is returned to its normal standard.

TREATMENT

All observers have followed a therapeutic procedure of their own according to the requirements of a given case but the outcome seems to be exclusively dependent upon the nature of the disease rather than upon the adopted treatment. Neosalvarsan, roentgen ray irradiation, polyvalent streptococcus serum have all been tried and found wanting. Blood transfusions in the great majority of cases have proved of no value. Injections of foreign proteids, theoretically, should be of some value but it also has been found lacking. The feeding of liver extracts and iron, raw bone marrow, high caloric diet have marked no beneficial effect on the disease.

W. H., age 37. Business man, married. Had a severe attack of pneumonia at 13. No history of any other illness till October, 1927, when he had an attack of renal colic with its usual history of sudden onset, pain radiating to the usual regions and bloody urine. Later took baths at Hot Springs where he was told he had colitis. In September, 1928, tonsils were removed as he had been told that his chronically infected tonsils were the cause of lack of "pep". During the past year has not felt well. There was no definite complaint and did not consult or take any medical treatment.

Latter part of January, 1931, called at the office. His chief complaint was nose bleed and painful areas on the gums. Examination showed a large perforation of the septum from margins of which blood was oozing. Nothing could be seen on the gums. A few days later the oozing from the nose had ceased but he still complained of painful areas on the gums. He was referred to his dentist, Dr. Cannon, who made a diagnosis of "trench mouth". On Feb. 2nd, the epistaxis had recurred and the perforation in the septum and anterior nares was filled with a large clot which included the nasal cavities. The nasal cavities were cleaned out. The margins of the perforation were touched with silver nitrate. Wasserman was taken but found negative. Feb. 6th, the dentist referred him back as he had developed a grayish sloughing mass of tissue posterior to the upper incisor teeth. This was not painful. There was no indication of infiltration of adjoining area. There was no tenderness. Manipulating or probing the sloughing mass produced no bleeding. Several dental x-ray films were taken of the involved area. These showed a perforation through the roof of the mouth posterior to the incisor teeth. Also an impacted canine tooth lying lengthwise along the roots of the other incisor teeth. A white cell count was made showing 4,000 white cells. The red cell count was not made. Differential count was polymorphonuclears 35, lymphocytes 61, monocytes 4. That evening he developed a high temperature with marked edema of the face. On Feb. 7th Dr. Cannon referred him to Dr. Madsen, orthodontist at Sioux City with the information that the patient had a low white cell count with indications of sepsis. He was placed in St. Joseph hospital for observation. That evening his temperature went to 103, pulse 100, respiration 24. A blood count made at the hospital the morning of Feb. 8th showed red cells 3,100,000, whites 400, hgb 60. Differential count polys 24, lymphocytes 74, large mononuclears 2, basophiles 0, eosinophiles 0. Upon this finding Dr. Story, pathologist at the hospital, made a diagnosis of agranulocytosis.

Feb. 12th. Temp. 102, pulse 110, albumen trace, appetite good, sleeps good, bowels regular. Sloughing area posterior to teeth seems smaller. Has small whitish area posterior to the original area involved. Mucous membrane of mouth has corrugated. Face slightly edematous. White cell count 350, polys 24 per cent. Feb. 13th, returned home from hospital at Sioux City in ambulance. Feb. 14th, general condition about same. Some bleeding from the nose. An enema produced stool mixed with blood. White cell count 1150. Differential count made according to Schilling method gave the following: juveniles 2, stabs 8, segments 14, lymphocytes 70, monocytes 6.

Feb. 15th, blood culture made by Dr. Eggers of Omaha was negative. Smear of the area made by Dr. Eggers demonstrated spirochetes. Dr. Bliss advised use of arsphenamine locally.

Feb. 16th, says he feels better.

Feb. 17th, has bluish discoloration of the infraorbital tissues. Upper lip swollen. Mouth does not have as septic an appearance.

Feb. 19th, feels best and ate best meal since he was taken acutely sick. Face not so edematous. Sloughs in mouth seem to be separating. Temperature lowest it has been for several days.

Feb. 20th, removed part of slough from roof of mouth; no bleeding. Has number of small purpuric spots along right side of chest and abdomen. Usually lies on this side. Request to get up in chair part of time.

Feb. 21st, continues to feel well and says he is improving. Removed another large slough from mouth. Water passes through roof of mouth into nose. Petechia have disappeared.

Feb. 22, has large crater-like cavity in roof of mouth.

Feb. 24th, walked about house.

Feb. 25th, temperature went to 104 this p. m. Has small nodules on edge of sloughing area. Complains of stiffness in legs.

26th, stiffness in legs not so marked.

27th, stiffness in legs more pronounced, temp. high.

Feb. 28th, pain in right arm.

March 2nd, severe sweat in afternoon.

March 3d, appetite not so good; drowsy all day.

March 4th, edema of face markedly increased; some stridor in respiratory excursion, which became severe at 4 p. m., and had to sit up in bed. Was given transfusion of citrated blood. Very slight or no reaction.

March 5th, at 9 a. m., feels good; at 2 p. m. has croupy cough; 6 p. m. ate good supper. Slept for an hour and a half. Told nurse he was feeling fine and went to sleep again. Nurse noticed he was not breathing well and pulse was not palpable. Died at 8 p. m.

Partial postmortem. Right femur cavity filled with blood in which bone marrow was floating like a cord. The spleen was slightly enlarged. Gallbladder filled with stones. No other conditions worthy of note were found.

Specimens of tissue were taken from the liver, spleen, bone marrow and slide made from blood in bone cavity, were submitted to Dr. Eggers for examination. His report is as follows:

Liver; there is little change here. The liver cells show a moderate degree of fatty degeneration, and in the interlobular areas there are occasional small foci of infiltrated cells in part polymorphonuclear, in part lymphocytic.

Spleen—Here there is a rather conspicuous atrophy, though far from a complete disappearance of the Malphigian corpuscles with corresponding increase of the pulp; however I am unable to find a definite change in the latter.

Bone marrow—The changes here are surprising in view of the history; instead of being atrophic, there seems to be hypertrophy of the cell forming elements, with conspicuous myelocytes and a profusion of apparent mature polymorphonuclear cells. In regard to this Dr. Latta, who is especially interested in blood regeneration, is making special stains, and if they show anything more shall let you know. No further report was received. Blood smear-polymorphos 81% abundance of early forms; large monos 15%; lymphocytes 4%. The low lymphocyte count is especially interesting in view of the atrophy of the Malphigian bodies in the spleen. I got the impression from the smear at the time it was taken there was actually a leukocytosis.

White cell counts:

Date Differential according to Schilling.

Feb.	W.C.	E	B	Myel	Juv	Stab	Seg	L'mph	Mono	
14	1500	0	0	0	2	8	14	70	6	
15	1700	2	0	0	0	4	12	76	4	
16	3000	0	0	0	0	14	14	56	16	
17	3200	1	0	0	0	1	14	82	3	
18	4000	1	0	0	0	2	23	83	1	
19	4500	0	0	0	1	1	29	68	1	(nucleated red ?)
20	4700	1	½	0	½	1	27½	68	1½	
21	4700	0	0	0	1	1	29	66	3	
23	4800	1	1	0	3	4	36	47	8	
25	5000	0	0	0	0	1	18	77	5	
27	3500	0	1	0	1	1	29	61	7	
March										
1	4000	1	0	0	0	0	39	57	3	
3	7600	0	0	0	5	0	37	37	21	
5	26600	0	0	0	0	0	22	67	11	

The following case report is furnished by Dr. N. E. Hansen:

Mrs. H. J., age 40, a widow, had an operation for the removal of a toxic goitre on the 9th day of March, 1931. She seemed to be making a very good recovery from this operation.

She was taken ill with a sore throat on the evening of April 20th and I was called in to see her first about noon on the 21st of April. At this time her temperature was 104, pulse 116, and the throat was very red and painful.

April the 22nd the temperature was 105, pulse 128, and there were some follicles present on her right tonsil. Throat very painful and patient restless and unable to sleep.

April 23d the temperature was 105, pulse 128, and a slight membrane on the right tonsil, which was easily removed by swabbing. Throat very painful and some regurgitation of liquids through the nose, but able to swallow part of the liquids.

April 24th temperature was 105, pulse 128, delirious, regurgitation complete and unable to swallow any liquids. Slight membrane present and gums very red and bleeding easily. The patient was somewhat cyanosed. At this time it was deemed best to remove her to the hospital.

Her temperature was 105.2 on admission with a pulse of 128. Two hours later her temperature was 101.8 with a pulse of 150. There was a gradual increase in cyanosis and labored breathing during the time she was there. The blood report was as follows: Red blood cells 4,650,000; Hgb. 70%; white blood cells 3800. The differential was not recorded on the chart, but only three granular cells were found in two complete slides. The remaining cells were lymphocytes. Throat examination: An area of membrane with some ulceration of about 3 c. m. in diameter was present on the pharynx just posterior to the right posterior pillar. There was no acute inflammation or edema of the tonsils, soft palate or uvula. There were many small ulcers on the lower alveolus. The nose was apparently negative.

The patient passed away about four o'clock in the morning of the 25th of April.

SURGICAL TREATMENT OF CHRONIC ARTHRITIS

Henry W. Meyerding, Rochester, Minn. (*Journal A. M. A.*, Sept. 12, 1931), believes that the deformities associated with chronic infectious arthritis may, in many cases, be relieved by operation. The function of some deformed and even ankylosed joints has been restored. The better results are achieved in the joints that do not bear weight, and of these the results in the elbow are by far the best. Sympathetic ganglionectomy and trunk resection, combined with orthopedic measures, should give improved results in a small group of selected cases. The totally disabled and supposedly permanent cripple, wholly dependent on others, has been restored to partial usefulness and independence.

URETHRAL CARUNCLE

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Urethral caruncle is a disease peculiar to the female urethra. It is a tumor, but unlike most benign tumors. is the seat of varous pains differing somewhat in character with each patient. It always causes a great amount of distress, and invariably upsets the stability of the nervous system. These tumors never reach any great size, the average being as large as a small cherry and the smallest may simply be a reddened ring about the orifice of the urethra not more than a few millimeters in thickness. In most cases the main part of the tumor mass is on the outside of the urethra, but a portion of it always exists within the urethral canal. In the case which has not been subjected to destructive therapeutic measures the part within the canal is generally not more than one-sixth of the entire mass and usually does not penerate the canal to a greater distance than three to five millimeters.

These tumors do not encircle the orifice of the urethra in a symmetrical way. The main bulk of the growth may be on one side or the other but is usually below the orifice. As a rule the mass presents a crescent shape with the thick heavy part of the crescent below, the horns encircling the urethra and thinning out very much in the portion above the meatus. The color is quite characteristic. The diseased tissue presents a bright cherry red appearance. In the recurrence after operative or destructive therapeutic measures the color may be somewhat changed and the tumor may present a somewhat darkened, livid appearance. This is probably due to venous engorgement from interference with circulation.

The characteristic feature of these growths from a clinical standpoint is their exquisite sensitiveness. Any contact, or moving about, or passing of urine over the growth induces exacerbations of pain which in some cases is very severe. The sensory nerves are apparently in a highly excitable condition and probably lie near the surface. The effect of urethral caruncle on the nervous system of the patient is always quite definite and apparent. Such patients are always in a condition to be described as highly nervous and irritable. In some cases this extreme nervousness causes a loss of weight; other patients suffer the local and general symptoms for many years without any loss of weight. It is supposed that the bad constitutional effect of the tumor is due to local irritation affecting the sympathetic nervous system day and night without remission. Irritations which affect the cerebro-spinal system are non-operative during sleep and this gives the neurons a chance to recuperate. In the case of a continuously acting irritant which affects the sympathetic nervous system the constant irritation allows no chance for nerve cell rest or recuperation. This is reflected in the unbalanced nervous condition of the patient.

From the standpoint of histopathology these tumors resemble angiomas. They have been variously described by writers as angiomatous, fibrous, and as other neoplastic structures. Apparently there is no agreement as to an exact histopathology. The histopathology undoubtedly varies in different patients. In some the blood vessel element predominates and such may be classified as angiomas. In others the connective tissue element predominates and these may be classified as fibromas. In others there is a large percentage of other tissues which leads to classifying the growth in other ways.

Skene calls these growths papillary polypoid angiomas. In describing one he says, "It consists of a bunch of dilated capillaries set in a moderately dense stroma of connective tissue. The vessels are dilated and in some cases very tortuous." Charles T. Alcott, professor of pathology at Cornell, in the July, 1931, number of *Surgery, Gynecology and Obstetrics,* writes in describing the microscopic structure of urethral caruncle, "Chronic inflammation was the rule, definite round cell infiltration of the stroma being found in twenty-one of the twenty-three cases studied."

All urethral caruncles are red, irritable and painful. All are sensitive to the passage of acid urine and all present a definite tumor mass. The diagnosis of urethral caruncle is made on these signs and symptoms.

The treatment has in the past been rather unsatisfactory because of the large percentage of recurrences after apparent cure. Treatment by caustic applications, by fulguration and diathermy all require some kind of anesthesia and the patient has pain for several days following. These forms of treatment are impractical in that the neoplasm practically always grows again within a short time. In cases that have been subjected to destructive methods of treatment; or have had unsatisfactory methods of treatment often repeated—a considerable mass of scar tissue is built up which itself becomes a source of trouble as the scar tissue. if very much thickened, is likely to erode or ulcerate easily, and this ulceration is likely to increase the pain and tenderness.[7]

Many kinds and types of surgical operations have been devised from the snipping off of the growth to the careful dissection of the tumor with the lower part of the urethral canal. Theoretically surgery is the treatment of choice but it isnot satisfactory because recurrence after surgical removal is as common as ofter the other methods of treatment mentioned. Even the most extensive surgical operations seem to be followed by recurrence as surely as the operations which barely remove the gross neoplastic mass. It seems the wound must be contaminated with some elements which have to do with reproducing the disease, or this disease producing element is present in the endothelial lining of the blood vessels and is capable of being brought into activity by the traumatism incident to the operation and the irritation from the subsequent scar. In this connection it bears a close resemblance to a certain type of malignant venous angioma which may be removed surgically but which always recurs at the point of operation and follows the endothelial lining of the veins further and further toward the heart until death occurs. The point of difference in connection with urethral caruncle is that these growths (caruncles) very seldom become malignant.

In twenty-five cases that we have seen, only two presented evidences of malignancy and in both of these the growth was localized and responded favorably to radium applications. Twenty of the twenty-five cases had had ineffective treatment consisting of surgery or physical therapy before coming for radium treatment. Of those who had been subjected to surgery, one had seven operations, and several others had multiple operations varying in number from two to five. In this series of cases the time since administering the radium treatment varied from one to sixteen years. The earliest cases were treated in 1914, and some have been treated almost every year since that time. The fact that there has been no recurrence, even in the patients treated more than fifteen years ago, is the best evidence of the permanency of the cure.

In every case it is necessary to remove irritating elements from the urine. In some patients there was a hyperacid condition of the urine, and in some sugar was present. Some were suffering from hypertension and passing large quantities of urine. Two had oxalate crystals. In every patient an effort was made to correct conditions which were contributing irritating factors, and it is possible that some of the freedom from recurrence may be attributed to putting the patient on the right kind of diet. In some cases large numbers of colon bacilli were present in the urine. In some showing the presence of colon bacillus, the condition had not yet progressed to the point of producing a colon bacillus cystitis. The patients showing the presence of colon bacillus in the urine were all women who were badly constipated, and, therefore, had a considerable degree of stagnant fecal matter in the colon. It is well known among urologists that such patients improve rapidly when put on a high fat, fruit, and vegetable diet as such a diet tends to relieve the constipation and the colonic stagnation. The colonic stagnation in these badly constipated women undoubtedly allows colon bacilli to multiply rapidly and to injure the intestinal mucus membrane. The organisms then become pathogenic and penetrate through the gut wall into the kidney, and from there are thrown suspended in the urine into the bladder. There is probably some direct passage of colon bacilli through the bladder wall from coils of stagnant colon lying directly in contact with the urinary bladder. The cystitis produced in some of these cases is undoubtedly often of the same etiology as the caruncle. The fact that the caruncle is a specific kind of tumor, occurring in a specific location, and having well marked symptoms affecting the local parts seems to point strongly in the direction of the principal irritating agent acting through the urine.

This might explain the recurrences following various methods of treatment, but would not explain the apparent freedom from the condition which is obtained after a thorough radiation with radium. It may be that the condition which we call caruncle is the result of an irritating agent in the urine acting over a long period of years, and allowing deep seated entrenchment of certain low grade infectious material. The complete removal of these elements is evidently not obtained by other agents and is satisfactorily accomplished by the proper use of radium. The patient is freed from the trouble even though the etiology be not completely removed. A period of years would be required for the second building up of the original pathology. In this connection the growth of the caruncle might be analogous to the growth of slow growing benign tumors in other parts of the body.

It is evident that a good deal can be done for these patients by eliminating irritating factors from the urine, keeping condiments out of the diet, and by maintaining an alkaline instead of an acid residue diet.

The following cases have been seen since 1914:

Mrs. E. W. V. Age 28. Treated May, 1916. A small, wiry, nervous woman with a caruncle which had been submitted to three operations. The recurrence was small but very painful. The patient was badly constipated and had colon bacilli in the urine. A corrective diet was prescribed for her to take away the acidity of the urine and the necessity for using cathartic medicines. The colon bacillus cystitis was treated. The caruncle was given an application of thirty milligrams of radium screened with one-half millimeter silver and eight millimeters wet gauze for fourteen hours. On August 25th and August 29th of the same year she was given twenty-five minutes with two fifteen milligram tubes of radium as she had some tendency to recurrence. Since that time she has been entirely free from the growth and symptoms.

Mrs. J. H. Age 40. Treated August, 1916. Bleeding uterine fibroid with urethral caruncle. The bleeding fibroid was successfully treated by an intra-uterine application of radium. The caruncle was treated a few days later by placing fifteen milligrams of radium inside the orifice of the urethra and fifteen milligrams across the tumor mass. This completely destroyed the growth and up to the present time there has been no recurrence.

Mrs. L. A. S. Age 35. Treated August, 1916. Urethral caruncle about the size of a small cherry which had been present for eight years. Two surgical operations with recurrence six months after the first and three months after the second operation. Thirty milligrams of radium was applied with a screening of one-half millimeter of silver and one millimeter of rubber for a period of six hours. Three weeks after the application there was an erosion of the mucus membrane at the point where the radium was applied, with superficial tenderness and slight oozing of blood and serum. Boric acid packs were applied three times a day for half hour periods each time. From the third week to the eighth week shrinking of the caruncle and healing of the radium reaction progressed steadily with complete healing and disappearance of the growth three months after the treatment. She has had no recurrence.

Mrs. R. B. C. Age 45. Treated September, 1916. She was a very nervous, excitable, somewhat overfat woman in the menopause who had submitted to seven operations for urethral caruncle. Her excitability bordered on mania. Pain on passing urine was very severe. The growth had recurred in the various scars to such an extent that there was quite a large mass in and around the meatus. A relatively large dose (sixty milligrams) of radium, heavily screened with one-half millimeter silver and one full millimeter of brass, was used for fourteen hours. This produced quite a severe reaction and during the period of reaction the patient went from Omaha to her home in Portland, Oregon. Four months later she wrote that the condition was completely healed and no trace of the caruncle remained. She has had no recurrence.

Mrs. B. Treated July, 1917. History of urethral caruncle for five years. No previous operation, but she had been treated by diathermy without beneficial results. The caruncle was rather large, about an inch in diameter, and extending over half an inch in the urethral canal. She was treated with sixty milligrams of radium screened with one-half millimeter of silver for four hours. This patient had had corrections made in diet and all urinary irritants removed before coming for radium treatment. The lesion disappeared and there has been no recurrence since her treatment.

Mrs. J. McD. Treated December, 1918. Urethral caruncle with a mass mainly within the meatus. Sixty milligrams of radium in one-half millimeter silver for two hours. Result satisfactory and no recurrence.

Miss R. H. Treated February, 1920. She presented a caruncle about the size of a pea of less than a year's duration. She was given the usual treatment and has had no recurrence.

Mrs. E. W. H. Treated April, 1920. An ulcerated caruncle which showed a ring of hardened epithelium around the ulcerated area. This was undoubtedly an epithelioma developing on the caruncle. It was treated by the insertion of four radium needles, each containing five milligrams of radium element. The patient returned for examination regularly for two years and was apparently well. Since that time we have not heard from her.

Mrs. R. C. Treated September, 1920. This patient presented an average sized urethral caruncle which was given the usual treatment with radium. She has had no recurrence.

Mrs. W. A. H. Age 58. January, 1921. Mrs. H. had severe nervous symptoms, pain and inability to sleep. In this case the caruncle was so sensitive that walking produced exacerbations of pain. She had had the growth removed surgically and by cautery. After the failure of the cautery a second operation was performed which was followed by prompt recurrence. The patient noticed a definite increase in the size of the tumor mass during the last two or three months. She was treated by 2 thirty milligram tubes of radium, screened with half a millimeter gold and one millimeter of rubber, one tube in the meatus and the other placed transversely across the neoplasm. Six weeks after the treatment the caruncle had entirely disappeared and she has had no recurrence, and no return of pain. Her nervous condition is very much improved and she has gained in weight.

Mrs. J. E. 68 years old. Treated February, 1921. Urethral Caruncle of two years standing which had been subjected to surgical operation twice, with prompt recurrence after each operation. The growth penetrated into the urethra about one-half inch. The patient was given sixty milligrams with one-half the dose in the urethra and one-half against the growth on the outside screened with one-half millimeter of gold. There has been no recurrence.

Mrs. E. S. Age 37. November, 1922. This patient had a urethral caruncle about one inch in diameter. The caruncle was removed surgically in 1916. In 1919 it recurred and was removed again. A year later it was cauterized. It recurred a year later and was then again subjected to operation and again returned. She was then sent for radium treatment. As there was considerable distribution of the growth through the area around the external meatus, and a considerable degree of hard scar tissue, she was given three times the usual dose of radium radiation. The patient has been examined every year since 1922 and there has been no recurrence.

Mrs. E. H. G. Age 80. Treated November, 1922. She gave a long history of pain in the region of the meatus and of several operations, as well as several electrical treatments, none of which gave more than temporary relief. At the time of coming for radium treatment she presented a carcinomatous area about the size of a silver dollar with the urethra coming through the mass. It was bleeding, discharging pus, had a bad odor, and was causing intense pain on the passing of urine. The area was treated with radium needles and underwent complete retrogression with local healing. After two years we lost contact with the patient, and presume that she died of her cancer.

Mrs. M. E. H. Age 49. Treated December, 1922. The patient had painful urination since the spring of 1919 and was given diathermy treatment which did not relieve the condition. Since the onset of this trouble she had lost eighteen pounds in weight and was very nervous. In 1921 the growth was removed by surgical operation. It recurred in a few weeks and was again removed and again recurred. She was then referred for radium treatment, and was given the usual treatment with the result that the growth completely disappeared and she has had no recurrence since.

Miss A. N. Age 40. Treated May, 1923. This patient had a urethral caruncle about the size of a small marble and had been made very much worse by improperly administered radium treatment. She had had a small plaque (probably five or ten milligrams) applied to the urethral caruncle. This had produced an ulcer. The ulcer was evidently the result of the action of the short beta rays as the plaque had been applied with no metal screening. This produced local sloughing without enough of the deep penetrating rays being present to cause the shrinking of the deeper parts of the growth. She was given a treatment with sixty milligrams of radium screened with half a millimeter of silver. This was sufficient to destroy the whole growth. As the main mass of the caruncle shrivelled and disappeared the erosion caused by the other treatment also healed. She has had no recurrence.

Mrs. E. S. N. Age 77. Treated October, 1923. This patient had a carcinoma of the labia and urethral caruncle. The malignant condition was treated with radium needles. The caruncle was treated as described with a radium tube in the urethra and another laid transversely across the meatus directly over the diseased area. The patient made a good recovery from the caruncle but died two years later from metastasis from the carcinoma.

Mrs. J. W. W. Age 52. Treated October, 1926. About two years previous to coming for treatment she noticed what she called a small red pimple at the meatus. She used baking soda locally and was advised by her physician to drink lemonade. The red pimple grew until it was one-half inch in size, and the pain increased progressively. The patient was highly nervous and very irritable and unable to sleep for more than two hours at a time. She was given a radium treatment with two thirty milligram tubes, one in the meatus and one transversely against the tumor mass just outside the meatus. These tubes were screened with one-half millimeter gold and one full millimeter gum rubber. The treatment was kept up for four hours. The next day a similar treatment was given except that the external tube was raised up one-fourth inch with gauze. Since her treatment she has had no recurrence and her nervous condition has entirely subsided. She has gained in weight and is apparently well.

Mrs. L. S. 68 years old. Treated October, 1927. This patient suffered with pain on urinating for about two years before submitting to surgical operation for caruncle. After two years the growth returned. It was then removed surgically by another physician but it promptly recurred again and was again subjected to surgical operation. After three months it had recurred again. This time it was treated by diathermy with no beneficial results. She was then referred for radium treatment. She presented a rather large caruncle with much scar tissue, which invaded the urethra about three-fourths of an inch. She was given two and a half times the usual radiation, and for a year she was free from trouble. Burning pain on urination caused her to return, and it was noticed that there was a bright red growth about one-half inch inside the meatus. This was given a radium treatment on October 15, 1928, and since that time she has had no further trouble.

Mrs. M. T. Age 52. Treated January, 1928. The patient was first conscious of severe pain after urination in 1921. About that time she noticed a cherry red growth at the meatus. Her physician treated her by irrigating the bladder. This gave her no relief. Another physician gave her temporary relief by applying silver nitrate to the diseased area. Some months later she was treated with electric needles and was given bladder irrigations. This gave very little relief. She was referred for radium treatment in January, 1928. The growth at that time was about the size and shape of a lima bean. The usual radium treatment was given and the growth was entirely destroyed and did not recur. Two years later she died following a gallbladder operation.

Mrs. H. L. Age 47. Treated May, 1928. A urethral caruncle about the size of a navy bean, very red and very painful. She had had severe nervous symptoms for the past ten years. It had been treated by silver nitrate and other caustic applications but no treatment gave her more than temporary relief. She had been told by two different physicians that the condition was malignant. The usual treatment was applied with one fifteen milligram tube in the meatus and one laid across the growth transversely for three and a half hours. Following the treatment there was a little erosion and some redness and swelling which persisted for about three weeks. This gradually subsided, and at the end of two months the tumor with all its signs and symptoms had disappeared. She has remained well since her radium treatment.

Miss M. O'D. Age 61. Treated June, 1928. The patient had occasional attacks of pain at the meatus. She was given urinary antiseptics by her physician, and medicine to alkalinize the urine. She did not have a physical examination until two months before coming for radium treatment, and at that time the caruncle was discovered. She had no local treatment previous to coming here. We gave her the usual treatment with two fifteen milligram tubes of radium for four and a half hours. The growth had entirely disappeared in eight weeks and since that time she has had no recurrence.

Mrs. J. W. Age 46. Treated February, 1929. Patient had been very nervous and for a year and a half had noticed burning pain after urinating. Examination showed a caruncle about half an inch in diameter. She was given the usual treatment with the result that in two months the growth had disappeared and she has had no recurrence.

Mrs. V. H. N. Age 52. Treated June, 1929. A history of being troubled with caruncle since 1919, and been treated by diathermy and other electrical methods four or five times. She was very nervous, had frequent urination followed by severe pain. The growth was about the size of a small olive, very tender, and troubled her a good deal in ordinary walking. She was given a three and a half hour treatment with the usual two 15 milligram tubes of radium in June, 1929. Her symptoms cleared up, but the trouble recurred in February, 1930. She was given another treatment at that time of the same amount, and since then has been free from pain. The growth has undergone retrogression but had not entirely disappeared at the time of her last examination in March, 1930.

Mrs. A. A. S. 30 years old. March, 1931. Severely painful urethral caruncle about one-half inch in diameter, and present something over two years with only medical and electrical treatment previous to coming for radium. We used two fifteen milligram radium tubes arranged in the shape of a T so that the stem of the T penetrated the urethra and the top of the T laid transversely across the caruncle. One treatment of four hours was given. The patient has had no recurrence to date and is entirely free from symptoms.

Mrs. C. Treated April, 1931, for a caruncle which involved the lower half inch of the urethra with only a small part of the growth protruding externally. The growth underwent shrinking after a four hour radium treatment with two fifteen milligram tubes of radium.

Urethral caruncle is a benign angiomatous tumor found usually in middle aged women, and characterized by an extreme degree of sensitiveness and bright red color. The histopathology of the disease is not constant and the etiology is not known. It very rarely becomes malignant. Recurrence is common after surgical removal and destructive methods of treatment. Radium, in the proper size dose, properly screened, and properly timed, is specific in this disease. There are few recurrences after a properly administered dose of radium radiation. Failure after radium treatment has been observed. In these cases there has been a lack of proper understanding of the physical effects of radium, a lack of understanding of the pathology involved, or an improperly balanced dose of radium radiation.

DRUG IDIOSYNCRASY DUE TO THE PHENYL GROUP

EDWARD S. MALONEY, M. D.,
Omaha, Nebraska.

Idiosyncrasy to drugs may manifest itself in one of two ways. There may be a lack of susceptibility to the average dose, or even to a toxic dose. To this condition we apply the term "tolerance". Usually, this condition is acquired. Alcohol, tobacco, and morphine addiction are examples of this type.

The other extreme of idiosyncrasy to drugs may be shown by an unusual susceptibility to small doses. Here it is necessary that one distinguish between the toxic effects of the drug and the unusual symptoms which we ascribe to allergy. Individuals are often made ill by small doses of certain drugs, a dose too small to produce toxic symptoms. Moreover, some of the symptoms are unrelated to the pharmacologic action of the drug.

The more common offenders are the coal-tar derivatives, the arsenic containing drugs, including arsphenamine, quinine, ipecac, belladonna, the opiates, and many others. Urticaria has been reported following the use of insulin, after-shave lotions containing quinine have been reported as causing dermatitis of the face. Edema of the genitals has followed the use of Veramon, a combination of Pyramidon and Veronal.

The symptoms of drug allergy as pointed out by Unger include those of the urticaria and angioneurotic edema type. Pruritus and erythema may also occur. Some few may react by high temperature as in a case I recently saw in which the administration of atropin for pylorospasm was followed by a temperature of 104.6 degrees.

As far as I know, the cases reported aside from the mere mention of the drug at fault, have advanced no explanation of this idiosyncrasy on the basis of a chemical group. In this case the urticaria and angioneurotic edema persistently occurred after the ingestion of several drugs, different in name, but related in chemical structure. Because of this, and the fact that one usually reacts to related substances rather than to unrelated substances, I believe that each contained a common radical, and investigation reveals that each drug has a phenyl group ($C_6 H_5$) as its nucleus.

CASE REPORT

Miss H. H., aged 25 years, presented herself because of urticaria and swelling of the face and hands for the past three years. The symptoms, while intermittent, were always severe at the menses. The family history was negative for allergy. There were no abnormal physical findings. Skin tests to the emanations, foods, and pollens were negative. She was placed on an elimination diet, and it was found that tomatoes, pepper, and oranges produced the urticaria and swelling. With avoidance of these foods, the symptoms promptly disappeared, returning only at the menstrual period. Inquiry disclosed the fact that aspirin was taken for menstrual pains. The patient was advised to substitute Pyramidon for aspirin, but the symptoms persisted, clearing immediately upon the avoiding of Pyramidon. At a later time, the patient became ill with influenza. She was given some capsules containing phenacetin, antipyrin, and quinine. The urticaria promptly reappeared. Upon stopping the capsules, the patient became free of urticaria. The same experience was met with in an attempt at medication with Luminal, Allonal, and Phanadorn.

Because a survey of the literature disclosed no explanation for this multiple sensitivity to drugs, the chemical structure of the offending drugs was investigated. It was found that each drug has a group in common—the phenyl group, and, to this fact, I ascribed the cause. Purposeful ingestion of other drugs belonging to this group, as anacin and compral tablets, demonstrated this contention.

The presence of a phenyl group in each of these drugs is shown as follows:

Aspirin: Acetylsalicylic acid (phenyl).
Pyramidon: Dimethyl amido antipyrine (antipyrine has a phenyl group).
Antipyrin: Phenyl dimethyl pyrazolone.
Phenacetin: Acetyl-para-phenetidin.
Quinine: Quinoline ring (double ring, related to phenyl group).
Luminal: Phenyl ethyl malonyurea.
Allonal: Contains a phenyl group.
Phanodorn: Contains a hexenyl group (phenyl).

Anacin: Mixture with phenacetin and acetyl salicylic acid.

COMMENT

A case of urticaria and angioneurotic edema due to drugs is reported. The explanation is advanced that the "phenyl" group which is common to each is at fault. To my knowledge, no one has before ascribed drug idiosyncrasy to a particular chemical radical. For this reason, the above is reported.

FAMILIAL ICTERUS GRAVIS OF THE NEWBORN: CASE REPORT*

JOSEPH KUNCL, M. D.,
Alliance, Nebraska.

It was my privilege to be called in consultation recently to see a baby five days old that was intensely jaundiced. While this in itself is nothing remarkable the marital history of this couple is so extraordinary that they were prepared for trouble.

The parents are both healthy, the father being a farmer of Danish origin and the mother age 40 being a sturdy and stocky woman that has never had any serious illness. There is no evidence of syphilitic taint and both have lived in this section of the country all their lives. There is no history of jaundice in the family of the mother or father. The mother has five brothers and sisters all living and in good health. In the father's family are four other children living and well and four were born dead. He could not give us more information than that about the dead children.

This couple was married in 1913. The following is the history of their children:

1. Girl born December, 1913, wt. 8¼ lbs., after a normal pregnancy and delivery. Baby appeared normal at birth. About the third day the child became icteric and was very sick but began to clear up when about two weeks old and gradually recovered. She is now 19 and healthy.

2. Boy born January, 1915. Normal pregnancy and delivery. Became jaundiced about the third or fourth day. Was very sick but cleared up slowly. Was jaundiced for two years. Is still living but is dull mentally and he still gets jaundiced at times.

3. Girl born February, 1916, after a normal pregnancy and delivery. Jaundiced slightly. This child was the least affected and is now living and well.

4. Boy born January, 1917, following a normal pregnancy and delivery. Became jaundiced soon after birth and died when 3½ days old.

5. Premature, born November, 1918. Mother had smallpox and miscarried at 8 months. The baby lived only a few minutes.

6. Boy born January, 1920, after normal pregnancy and delivery. Became deeply jaundiced and died when four days old.

7. Girl born June, 1922, after normal pregnancy and delivery. Was deeply jaundiced for a month. At about 11 months of age it was noted that the child was abnormal mentally. The child is still living. She is an idiot and has chorea.

8. Boy born June, 1927, after normal pregnancy and delivery. Died deeply jaundiced when 3½ days old.

9. With this last pregnancy the mother came to the attending physician when 5 months pregnant and was fearful as to the outcome. She was given Chloro-calcium to take internally. The child was born Oct. 8, 1931, after an easy labor. The child weighed 7½ lbs., cried lustily when born and had a slightly redder color than normal, but appeared to be a healthy vigorous child. On Oct. 10th it began to show signs of jaundice. The stools were yellow and the urine stained the diaper. Child cried when its position was changed but took food eagerly. It was fed cow's milk because the mother thought that her milk might be responsible for the condition in the other children.

On Oct. 11th when I first saw the child it was very drowsy, cried feebly and refused food. It was intensely jaundiced. There was an expiratory grunt and the temperature was 100. The cord was not infected. No evidence of petechia or hemorrhage. Stools yellow. Heart and lungs normal. It gradually became weaker and died Oct. 15th.

Autopsy of abdomen did not reveal any gross abnormality. The bile ducts were patent.

Never having seen or read of a similar case or being unable to find a description of it in any of my textbooks, I reviewed the literature on the subject and found that it was probably rare enough to warrant recording.

H. Rehn of Frankfort reported a case in 1912 and stated that in his fifty years of practice he had not seen a case like it. Abt who first called attention of the American profession to the condition in 1917 reports two cases in his experience.

The first detailed description of familial icterus was given by Pfannenstiel in 1908. He described two fatal cases and collected scattered reports in the literature.

Dr. Paul Klemperer of New York described the pathology in detail in three cases in 1924 two of which were quite typical of this condition.

Sir Humphrey Rollaston who reviewed the literature collected 25 family groups and 130 cases. He attributes toxemia of pregnancy as a cause.

Knopfelmacher who reviewed the literature in a critical way is inclined to think that a septic process is involved in these cases. Abt feels that this has not been proven.

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*Read at Staff Meeting, St. Joseph Hospital, Alliance, Dec. 3, 1931.

The cause of familial icterus of the newborn is unknown. It is not present at birth but appears a few days after birth. The disease has nothing in common with Buhl's or Winkle's disease, and there is no evidence to prove that it is due to a septic process. There is no evidence of a toxemia of pregnancy in these cases and most of the children are robust, born after c labors.

The disease usually occurs in the successive children of the same mother. The children usually die a few days after birth from a profound icterus. In a majority of cases the first born escape death. Rolleston points out that in his 25 family series collected from the literature 14 of the first born escaped. As a rule there is no hereditary influence, nothing of a similar nature is discovered in the family of the father or mother. The stools are yellow indicating patency of the bile ducts and the urine is bile stained. The Van den Bergh test is negative demonstrating a hemolytic jaundice. As the disease progresses there may be hemorrhages from the mucous surfaces or into the skin. Death occurs from collapse. There is no relation to syphilis in these cases.

The chief pathological findings are marked destructive changes in the liver microscopically. The liver is sometimes slightly enlarged but the bile ducts are normal.

SUMMARY

1. Report of case of familial icterus gravis of newborn in a family having 9 children of which two are healthy children. Two others are abnormal and five are dead, four of which died of a profound icterus.

2. The condition is quite rare.

3. A brief review of the literature is presented.

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A SIMPLIFIED AND IMPROVED METHOD FOR RADICAL AMPUTATION OF THE BREAST

V. L. SIMAN, M. D.,
Norfolk, Nebraska.

The arm is placed at right angle to the body with the hand turned up. An incision through the skin starting well up the arm and high enough to miss the long saphenous. This is carried down around the breast on either side. Another incision is made starting at the middle of the clavicle and continuing downward and laterally bisecting the original incision that surrounds the breast on the medial side. In making the incision it is well to stay close to the breast to aid in closure.

Next the skin only is dissected back to the sternum and down to the latissimus dorsi muscle and up to the clavicle leaving about one and one-half inches of the pectoralis major muscle by separating the fibers by running your finger down towards the insertion of the pectoralis major. (Cut with scissors.)

The dissection of the pectoralis major is continued down until you come to the pectoralis minor. Next insert scissors under the minor to loosen, and cut (staying quite a distance from the axillary space). Following the dissection the field is cleared of the breast, pectoralis major and lower portion of the pectoralis minor muscles. Next find the tendenous origin of the latissimus dorsi muscle and at this point go straight in about an inch and you will find the subscapular nerve and artery (these are to be isolated). Next go straight on to the chest wall at the same level and you will be in very close proximity to the long thoracic or the nerve of Bell.

The tendenous portion of the latissimus dorsi (that is its origin) is only about one inch below the axillary vein. Next the upper portion of the pectoralis minor is dissected down (keeping always above the corico membrane). The regular cleaning out the axillary space of glands, etc., is carried out as usual.

In closing use a retention stitch—place drain at lower angle (stab wound) pack axillary space well with dressing and dress wound to the side.

Put drain at lower angle (stab wound) pack axillary space well with dressing and dress wound to the side.

The important feature of this operation is that after locating the origin of the tendenous portion of the latissimus dorsi muscle the structures that are to be saved, namely the nerve of Bell, subscapular nerve and artery, are directly internal to it and at the same level, your axillary vein is about one inch above. In fact, all structures to be saved are in this particular location.

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THE MISSOURI VALLEY MEDICAL SOCIETY GIVES A SUPERB POST-GRADUATE COURSE

The philosophy of what medical society programs should consist. is rapidly changing. Within vivid memory of those who have observed such meetings for an ordinary lifetime, programs have changed from the staid, sometimes doleful, recital of personal case reports by members of the society to discussions of the problems of scientific medicine by teachers imported for the purpose, to the infinite betterment of medicine as a science and the greater enlightenment of the physician in attendance at the meetings.

Two months ago a medical meeting held in Omaha was thought to have been the outstanding meeting of this area in scientific worth—and it was. The Missouri Valley Medical Society meeting held in Omaha the last three days in March was even better in its presentation of up-to-the-minute scientific matter. The attendance at the two meetings was about the same—about two hundred in each instance.

The outstanding feature of the meeting was the postgraduate course on cancer pathology given under the personal direction of Dr. J. C. Bloodgood, Baltimore, and Dr. Max Cutler, Chicago. About forty physicians, each with his microscope appeared to take this course.

Among the subjects covered by the scientific program were Research in Butolism; Malarial Therapy in Congenital Syphilis; Urinary Infection in Childhood; Surgical Treatment of Trigeminal Neuralgia; The Autonomic Nervous System in Relation to Some Clinical Problems; Post Menopausal Bleeding; Arterio-Sclerotic Heart Disease; Advances in Gastro-Enterology; Colitis; Cardiac Decompression; Chronic Bacterial Arthritis; Complications in Diabetes Mellitus; Abdominal Pain; Vitamines; Hip Joint Disease; When and How to Do a Biopsy; Latest in Radium Treatment of Cancer; The Etiology of Cancer; Present Status of Deep Therapy.

Dr. Bloodgood gave a cancer clinic; Dr. Helmholtz gave a diagnostic pediatric clinic; Dr. Loyal Davis, a clinic on intractable pain; Dr. Alverez one on constitutional inadequacy; Dr. Claude Beck one on selected heart cases suitable for surgery due to circulatory disturbances. There were also a number of sound motion pictures shown.

Dr. D. J. Glomset, Des Moines, was elected president-elect and Dr. J. D. McCarthy, Omaha, was reelected secretary-treasurer. A strong argument was put forth at the banquet to organize an Omaha Fall Clinic in place of having a society with meetings at various places.

THE FORTHCOMING ANNUAL MEETING

The annual meeting this year will be held about two weeks later than the average time of annual meetings in this state, the change having been suggested for the reason that the meeting of the American Medical Association at New Orleans occurs so near the middle of the month. Looking at the prospects we first notice the offering of an unusually good program. The guest speakers will be Dr. Thomas Kinsella, Glen Lake, Minn.; Dr. Karl Menninger, Topeka, Kansas; Dr. Henry Schmitz, Chicago; Dr. Walter C. Alvarez, Mayo Clinic, Rochester, Minn.; Dr. Walter D. Abbott, Des Moines, and Dr. A. C. Ivy, Chicago. The local committee is working hard to outdo former efforts in entertainment and will not disappoint us.

The question of membership must be touched upon. The secretary-treasurer reports that the payment of dues to date is about 20% less than it was last year at the same period. This does not necessarily indicate defection, but rather delay due to stringency. Let every delinquent make heroic efforts to reinstate himself, for nothing means so much to the average physician as his membership in organized medicine.

Remember the dates, May 24, 25, 26; the place, Hotel Lincoln, Lincoln.

YOUR SIXTY-FOURTH PRESIDENT

Dr. Arthur E. Cook--

incoming president of the Nebraska State Medical Association, was born in a log cabin near Newcastle, Nebr., December 22, 1870. The so-called Ionia volcano is on a farm adjoining his father's homestead. He attended the country school of Dixon county and high school at Columbus, Nebraska. In early manhood he worked in a butcher shop, clerked in a store and taught in the rural schools of Dixon county.

He attended the Sioux City College of Medicine from which he was graduated in the spring of 1898, following which he practiced at Alpena, S. D., for one year. He located at Randolph, his present location, in the spring of 1899.

He was married to Miss Mary Belle Hosmer, July 26, 1899, and to this union three children were born: Dr. Stuart H. Cook, now associated with his father in the practice of medicine at Randolph; Alice E., wife of H. F. Edlund, Ft. Wayne, Ind.; Kenneth W. Cook, associated with the Pasadena Star-News. Mrs. Cook, mother of his children, passed away February 4, 1920.

DR. ARTHUR E. COOK

On the 17th of November, 1927, Dr. Cook married Mrs. Helen R. Buol of Randolph.

Dr. Cook has always been interested in medical society activities. He is a charter member of his county medical society, has been a member of the Nebraska State Medical Association since 1900 and has been councilor of the Fourth Councilor District since 1918. He is also a member of the Elkhorn Valley Medical society, the Sioux Valley Medical society and is a Fellow of the American Medical Association.

He always has interested himself in the civic affairs of his community, has served eighteen years as a member of the board of education, part of which time he was treasurer and part of the time president of the board.

*P*residential *P*ertinent *P*oints

The president of the Schuylkill Co., Pa., Medical Society, Dr. W. J. Scannell, gave out ten pertinent points he would like observed and eight of them are republished herewith, with our commendation:

1. A better monthly attendance at stated meetings. One-fourth of one hundred fifty members is not enough to be of real value in a thriving organization.

2. Prompt payment of dues each January year after year.

3. As an incentive to greater usefulness, the annual selection of the most valuable member of the society at the close of the year, and reward him with some suitable decoration of honor and merit.

4. The abolition of the obsolete custom of framing a set of Resolutions of Condolence, but in its stead to send a real letter of sympathy as as expression of sorrow and esteem.

5. The selection of the most meritorious paper presented before the society during the year and have it forwarded to the state medical journal for publication.

6. Suggested that all papers be short and classy, and all discussions brief and snappy.

7. The continuation and development of the friendly relations engendered between the dentists and druggists in each county, and a recommendation that we meet with them again this year.

8. Suggests that every member should secure a copy of the constitution and by-laws of our own society and make himself familiar with the contents thereof.

COMPLIMENTARY DINNER CELEBRATING FIFTY YEARS IN MEDICAL PROFESSION TENDERED EDITOR

It's fine to be a hero, if but for a day;
It's fine to have friends by the score.
It's fine to be priv'leged to serve fifty years,
'Tho' life lasts not a single day more!

DR. F. A. LONG
Editor, Nebraska State Medical Journal

It would be somewhat embarrassing to prepare one's own obituary; but not much more so than to prepare the story of a testimonial dinner given in one's honor, just because of admitting fifty years in medicine one acknowledges himself in the decadence of advancing years. But duty calls for action.

The Madison Six County Medical society sponsored a complimentary dinner in the ballroom of the Hotel Norfolk, Norfolk, on the evening of April 15, 1932, commemorating Dr. F. A. Long's fifty years in the medical profession. One hundred forty-six physicians and their ladies from the area covered by the society and from Omaha and Lincoln, attended the dinner. A happier group was never seen—happiness beamed from every countenance.

Dr. B. F. Bailey, Lincoln, acted as toastmaster and the speakers were Dr. John E. Summers, Dr. J. P. Lord, Dr. A. F. Tyler, and Dr. B. B. Davis, Omaha; Dr. Roy Adams, Lincoln; Dr. Morris Nielsen, Blair. "Doc" A. L. Bixby of the Lincoln State Journal read an original poem dedicated to Dr. Long.

A two fountain pen desk set was presented to Dr. Long by the Six County Medical society, as a remembrance.

Dr. FRANCIS A. LONG, Madison, was born near Kreidersville, Northampton county, Pa., February 16, 1859, of Pennsylvania-German parentage. He attended public school from six to sixteen years of age, under the same teacher. In his teens he worked as a railroad section hand, as a laborer about the car shops, fired the cupola of a foundry, and was accountant of a lumber yard, all before he was eighteen years of age. At eighteen he came to Moulton, Iowa, with his parents, where he completed two years of high school work, then taught a number of terms of country school in Iowa and Nebraska, studying medicine meanwhile under the direction of a preceptor. He attended the regular Medical Department of the State University of Iowa during the winters of 1880-81-82, and was graduated March 1, 1882.

He immediately became assistant to a brilliant young surgeon at Moulton, Iowa, but becoming dissatisfied, after 3½ months, he came to Nebraska and located at Madison, June 27, 1882. Here he led the life of a pioneer doctor among real pioneer people. The adage "Root hog or die" had to be applied to everyday life. The problems that confronted the pioneer doctor had to be met from day to day for those were the days before specialists—and consultations were few. Pioneer life developed self reliance.

In December, 1892, with the assistance and cooperation of Dr. F. L. Frink, Newman Grove, he did an appendectomy at a country home, probably the first appendectomy performed in north Nebraska, outside of Omaha.

He assisted Dr. P. H. Salter, Norfolk, to organize the Elkhorn Valley Medical society in 1896 and was its first secretary and third president.

He was president of the Nebraska State Medical Association, 1906-07; delegate to the American Medical Association, Atlantic City, 1907, Chicago, 1908, Los Angeles, 1911; delegate to the Council on Medical Education and Medical Legislation, 1909 and 1910; delegate representing the Nebraska State Medical Association to the Second Conservation Congress at St. Paul, Minn., 1910.

A Fellowship in the American College of Surgeons was conferred on Dr. Long at the Boston meeting in 1915.

Dr. Long is known as the father of *The Nebraska State Medical Journal* for he was the first to advocate, in his presidential address in 1907, the creation of such a journal and later was chairman of several committees leading up to the establishment of the Journal in 1916, when he became chairman of the publication board, a position he still holds. Following the rather sudden death of the editor in 1920, Dr. Long took up the editorship and has continued in the position to this date.

A physical break in 1923 forced him to partial retirement and since then he has devoted himself largely to the building of a worthy state medical journal as his contribution to organized medicine.

The roads having been a part of his life for so many years he early became interested in the Good Roads Movement, assisted in the location of the Meridian Highway (U. S. No. 81), was a member of the Meridian Highway Mission to Mexico City in 1922, (had an audience with President Obregon at the Palace of Chapultepec), was vice president for eight years of the International Meridian Highway Association. He organized and mapped Upland Highway.

Dr. Long was married to Miss Maggie E. Miller at West Point, Nebr., December 2, 1884. To this union were born three daughters: Frances Louise, plant ecologist, Santa Barbara, Calif., (with Carnegie Institution of Washington); Harriet Catharine, Salem, Ore., state librarian of Oregon; and Margaret Eleanor (Mrs. J. W. Whisenand), Peoria.

MOST GOVERNMENTS ARE INEFFICIENT OR CORRUPT—SOME ARE BOTH (Continued)

The founders of our government subdivided it into three branches; the administrative, the legislative, and the judiciary. This was done on the theory that each had a distinct function to perform and that they would all act somewhat as checks and balances upon each other. This seemed logical at the time and undoubtedly has many advantages, but our founders did not and could not foresee one of its dangers and one of the abuses to which this division was to be put, namely, the practice of sidestepping duty and responsibility. One of the chief governmental in-and-outdoor sports today is "passing the buck," with an "open season" the year round.

In a project involving as many problems as social insurance does, all the branches of the government would be involved in its execution—the administrative in administering it, the legislative in enacting the necessary laws, and the judiciary in adjudicating them. Let us then examine briefly how the different branches have deported themselves in the more recent past. Let us start by examining just one typical administrative activity of both the federal and the state governments.

Individual members of the medical profession have repeatedly called attention to the great need of a careful study of all delinquents and criminals in our state and federal institutions in order to determine the mental and physical condition of each member of these two classes with a view to their rehabilitation and possible declamation and yet, almost nothing has been accomplished along these lines by governmental agencies. Dr. Frank L. Rector who recently completed a survey under the auspices of the National Society for Penal Information on health and medical work in all state and federal prisons and adult reformatories, states unequivocally that in not one of these institutions is there a well-rounded balanced medical and health program. While some of them provide acceptable accommodation for the care of the acutely sick or injured, there is little or no provision for the rehabilitation of the physically handicapped so that they will be better equipped for earning an honest living after their discharge to civilian life.

Just one typical example. On the day Dr. Rector visited the Ohio State Penitentiary, there were four thousand, four hundred seventy-five prisoners within its walls, of which one hundred fifty-six were hospitalized. There was but one physician on the staff, all other attendants at the hospital were prisoners. While the physician was nominally on a full time basis he was carrying on an outside private practice as his salary from the state was insufficient to meet his living expenses. What can one part-time physician accomplish with that many patients, a large per cent of whom are physically handicapped, mentally abnormal and emotionally maladjusted? Ohio is a fair example. In most of the other penitentiaries and in the federal prisons conditions are no better and in some even worse.

Now let us investigate some of the legislative problems. While nearly every legislative body contains some men of outstanding ability the great majority of legislators have not the slightest conception of what is required of their position and blindly follow their party bosses who are not generally known for their altruism, their patriotism, or a burning desire to promote the public welfare. One of the worst features of our legislative activities is the fact that a small, well-organized and insistent minority can usually get its measures enacted into law unless some other group is adversely affected by the proposed legislation and makes a counter-attack.

Another bad method of securing legislation is the system of trading. An interesting occurrence of this sort happened in the state of Illinois in 1923. About that time a Chicago mayor was disgracing not only his city and state but the nation by the slogan, "Hit King George on the Snoot." A free citizen from the corn lands of the state decided that he would like to be sent to the state legislature, took up the battle cry, had just one plank in his platform, namely to make the American language the official language of the state. He was elected. By use of extensive vote trading he secured the passage of the following:

OFFICIAL STATE LANGUAGE

An act establishing the American language as the official language of the State of Illinois. (Approved June 19, 1923. L. 1923, p. 7). Preamble.

177. (American language). 1. Be it enacted by the people of the State of Illinois, represented in the General Assembly:

The official language of the State of Illinois shall be known hereafter as the "American" language.

—Edward H. Ochsner, Chicago.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE POST-GRADUATE COURSE

The University of Nebraska College of Medicine will offer a week's Post-Graduate Course from June 6 to June 11, 1932, inclusive. We are compelled to hold this meeting somewhat later than in former years because of the conflicts with the meetings of the American Medical Association, the American Pediatrics Society, and the Nebraska State Medical Association.

The course this year will be offered under the auspices of the Departments of Obstetrics and Pediatrics, and will be confined largely to practical work in the wards and clinics.

The laboratories, especially the Departments of Anatomy, Pathology and Bacteriology, will be available for use at all times, likewise the library. The fee for this course will be ten dollars, and the number accepted will be limited to thirty. Unless ten have registered by May 15th the course will be withdrawn. Address all communications to the Dean's office.

R. W. Bliss, M. D., Chairman,
W. H. Taylor, M. D.,
C. R. Kennedy, M. D.,
Committee on Post-Graduate Courses.

THE STOCKMAN AND THE DOCTOR

"Out on the farm the stockman has some animals—horses, hogs, cattle, and some poultry. If sickness or disease should make its appearance among those animals or fowls, can it be imagined, that that stockman would call a Christian science veterinary, an osteopathic, or a chiropractic veterinary to treat those animals or fowls? Never. No one ever heard of such a thing. Why? Because there is only one kind of veterinary—the Regular veterinary."

"There never has been, and there never will be such a thing as a Christian science veterinary, an osteopathic veterinary, or a chiropractic veterinary, for the reason, that, whatever notions stockman might have about ailments in their own bodies, or among the members of their families, they never fail to use horse sense when it comes to sickness or disease among their domestic animals."

—Extract from Medi-Cult, The A-B-C of the Medical Profession, by Dr. B. F. Lorance, Auburn, Nebr.

DERMATOLOGIC HINT NO. III

Sharply marginated, infiltrated, erythematous patches on the hands should cause the physician to examine the feet for fungus infection.

—Donald J. Wilson, Omaha.

OBSTETRICAL AND GYNECOLOGICAL HINTS. NO. III.

A rising diastolic blood pressure reading during the last six weeks of pregnancy is of far more importance than the systolic reading in the diagnosis of early toxemia of pregnancy.

—Harold S. Morgan, Lincoln.

X-ACTLY SO!

The Roentgen Rays, the Roentgen Rays
What is this craze?
The town's ablaze
With the new phase
Of X-ray's ways.
I'm full of daze
Shock and amaze;
For nowadays
I hear they'll gaze
Thro' cloak and gown—and even stays
These naughty, naughty Roentgen Rays.

(Wilhelma in *Photography* shortly after the announcement of Roentgen's discovery, January, 1896.)

DR. JOHN P. LORD AND DR. HARRY HAPEMAN ON THE FIFTY YEAR HONOR ROLL

DR. HARRY HAPEMAN

DR. J. P. LORD

Medical history is a part of medical journalism. When a physician completes fifty years of practice he has had a career of much historic interest; but when two persons from the same area, attend the same medical college, as roommates, and graduate at the same time, move to the same distant state and live to celebrate as lifetime friends, fifty years of practice, that is an event of more than ordinary historic interest and importance.

Dr. John Prentiss Lord, Omaha, and Dr. Harry Hapeman, Minden, are the lucky physicians to be congratulated at this time. Their *alma mater* is Rush Medical College, Chicago, and the exact date of graduation was February 21, 1882.

Dr. JOHN PRENTISS LORD, Omaha, was born at Dixon, Ill., April 17, 1860, of American ancestry dating back three hundred years. He attended Rush Medical College three years and was graduated in the spring of 1882. He did postgraduate work in the New York Postgraduate School in 1886.

He practiced in Creston, Ill., from 1882 to 1886 when he came to Omaha. He early evinced a preference for surgery and has devoted himself to this specialty exclusively since 1892. He was professor of anatomy at Creighton College of Medicine in 1892; professor of surgery at the same college from 1893 to 1913.

Having decided to limit his surgical activities to orthopedics he was made professor of orthopedic surgery in the Nebraska University College of Medicine in 1913 and holds the same position at this time. He is orthopedic surgeon to Clarkson, University, Methodist, St. Catharine's and Lord Lister hospitals.

He was one of the prime movers in the establishment of the Nebraska Orthopedic hospital, was the first chief surgeon and held the position until 1917 when he resigned to enter the medical corps of the army.

He is consulting orthopedic surgeon for the Convalescent Home for Crippled Children.

He was one of the organizers of the American College of Surgeons and has been honored as state governor for several years. He has been for many years a member of the American Medical Association (chairman of the Section on Orthopedic Surgery at the Washington meeting in 1927), and, of course, of the Nebraska State Medical Association (president, 1910-1911), and the Omaha-Douglas County Medical society (sec., 1899, president 1900). He is a member of the Missouri Valley Medical society (was president 1915-1916); he belongs to the American Orthopedic Association, the Western Surgical Association (president 1911), the Elkhorn Valley Medical society of which he was sometime president, the Sioux Valley Medical society and a number of others.

He holds membership in a number of patriotic, civic, literary and social clubs, including the Society of Colonial Wars.

Dr. Lord has been a generous contributor to medical literature.

Dr. and Mrs. Lord have traveled extensively and within a year returned from a year's trip around the world. Dr. and Mrs. Lord have a son and daughter, both married, and there are six grandchildren.

Dr. HARRY HAPEMAN, Minden, was born at Earlville, Ill., February 1, 1858, the son of an Illinois pioneer of 1836 and of Revolutionary ancestry. After leaving the public school, he attended Milton College and Northwestern, each two years. His first year in medicine was taken at Chicago Medical College and the other two years at Rush, graduating from the latter in the spring of 1882.

He practiced at Polo, Ill., two years after which, in 1884, he came to Minden where he now resides and where during all these years he has led a very active professional life.

He attended four postgraduate courses—one in surgical anatomy, one in general medicine, and two, of a month each, under Dr. Clarence Webster at the Presbyterian hospital, all in Chicago.

He has been a faithful member of the Nebraska State Medical Association for many years.

Dr. Hapeman has always been interested in surgery and was a pioneer in the surgical field in the Minden area and does considerable surgery at this time. A Fellowship in the American College of Surgeons was conferred on him at the Boston meeting in 1922.

As an avocation or diversion, Dr. Hapeman pursues the study of botany. He was a close friend of the late professor Bessey. His collection of specimens may number up to 20,000.

Dr. Hapeman has been twice married. His first wife, Mrs. Carrie R. Hapeman, who passed away in 1915, was president of the Nebraska Chapter and also president of the Supreme Chapter of the P. E. O. She was also a skillful painter of china.

Dr. Hapeman's second marriage occurred some fifteen years ago. They have one daughter. The Hapeman home at Minden is reputed to be one of the finest in the state.

THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

In 1822 James Carson of Liverpool, in his "Essays, Physiological and Practical," said, "It has long been my opinion that if ever this disease (phthisis) is to be cured, and it is an event I am by no means disposed to despair of, it is to be accomplished by surgery, in other words, by some surgical operation."

Carson did not elucidate his statement and the practical application of his conviction did not come for nearly a century.

There can be little doubt that he was influenced in his thought by his contemporaries John Hilton and Sir Astley Paston Cooper and by William and John Hunter, both of whom had died within a half century.

These four surgeons were thorough going exponents of the principles of rest and immobilization in the treatment of infections. Since their day, these measures have remained fundamental in the management of surgical infections. It is only latterly, however, that they have been extended to the treatment of pulmonary tuberculosis.

The pathologic sequence of invasion of the lung by tubercle bacilli does not vary a great deal. There is primary parenchymal infiltration followed by caseation, which results either in fibrosis and calcification or ulceration with cavitation. Authentic statistics show that 85% of the cases of pulmonary tuberculosis with demonstrable cavities are dead within three to five years. It is toward the prevention or closure of these cavities, that the surgical treatment of phthisis is directed.

Thoracic surgery is the newest born of the surgical specialties. For ages the bony thorax and its contents were held sacro-sanct by the surgeon. So frequently and so consistently did death result from accidental or surgical invasion of its closed cavity, that surgeons limited their efforts to little more than paracentesis or small rib resections for drainage of pleural empyemata. In these cases a more or less rigid and sacculated pleura and a relatively fixed mediastinum minimized the dangers of serious respiratory or cardiac embarrassment. With gradually increasing knowledge of the physiology of respiration and of the effects of alteration of intrapleural and intrapulmonic pressure, the factors of safety and the criteria of danger became recognized and the surgical therapy of intrathoracic disease rapidly broadened.

Naturally the majority of surgery of the chest is concerned with pulmonary tuberculosis in which it must be combined with a thorough knowledge of tuberculosis in all its manifestations. A close cooperation between the internist and the surgeon is essential. The former will have an intimate knowledge of the resistance of the particular patient to the tubercle, the tendency towards fibrosis or cavitation and toward the development of amyloid disease. He should be able to apprehend the degree of systemic reaction that will result from even minor or graded surgical procedures.

There is no field of surgical endeavor in which greater discrimination is required in the selection of patients and in the choice of operative procedures. Abrogation of sound judgment to impelling enthusiasm will result in disaster.

However, in nearly all early cases the progress of the disease can be arrested and cavitation avoided by either pneumothorax or phrenicectomy with proper systematic treatment, the latter being beyond all doubt, highly essential. In many of the later cases in which cavitation has developed, pneumothorax, pneumolysis, thoracoplasty or other measures commonly employed will render patients cough and sputum free, returning them to the wage earning group from which the great majority come, with their cavities closed, removed from the group of dangerous contacts.

In the active tuberculosis clinics 65% to 75% of cases of pulmonary tuberculosis are subjected to one or more of the measures above outlined. If these measures be considered surgical, to this extent, pulmonary tuberculosis is becoming a surgical disease, but none of the measures above outlined has any proper place in the treatment of the disease unless combined with proper medical treatment and bed rest.

Collapse therapy in pulmonary tuberculosis has a rational basis and carries a low enough mortality rate to be now placed among the generally accepted surgical procedures. Already a large registry of cures insures it an important and permanent place in phthisiotherapy.

—J. W. Duncan, Omaha.

EDITORIAL PARAGRAPHS

A post-graduate course will again be offered by the University of Nebraska College of Medicine, beginning June 6, continuing to June 11.

The Department of Public Welfare announces a medical examination to be given June 9, 10, 11, at the University College of Medicine, Omaha.

The American Proctologic Society will meet at Memphis, Tenn., May 6 and 7, immediately preceding the annual meeting of the American Medical Association at New Orleans, May 9 to 13.

The authorities of Omaha have honored themselves and the city of Omaha by renaming Riverside drive, "Gifford Drive" in honor of the late Dr. Harold Gifford, famed oculist and nature lover who had given to the city several tracts of land along the river to preserve its scenic beauty and as a refuge for wild life.

The Western Branch of the American Public Health Association will hold its third annual convention in Denver, June 9 to 11. About two hundred guests are expected. The number includes outstanding representatives in the public health field throughout the United States. Convention headquarters will be maintained at the Brown Palace Hotel.

From a Nebraska press clipping we learn of a man who graduated from the Nebraska State University, taught school, graduated in medicine from Ann Arbor in 1879, practiced a few years, engaged in the drug business and thirty-one years ago became editor of a Nebraska village newspaper from which he has just retired (presumably wealthy) at the age of seventy-seven.

A valued correspondent and friend philosophizes: "I don't believe I am quite as serene as you are. I still resent the inequalities and injustices of life—not from anything that has happened to me but because of the other fellow. I think this so-called depression has shown up the high-brows in all lines of endeavor more pitiably than anything that has ever before occurred in my lifetime. As I see their floundering statements in the way of explanations I am inclined to agree with Schimmy Fadden when he said 'nobody knows nothing.' And, then it occurs to me that after I show my contempt for the high-brows, or express my contempt for them, that the low-brows are a rotten bunch also. You can't do anything with them and this is particularly true of the high-brows and low-brows in the medical profession. Perhaps this is all biological and it was intended from the very beginning as it probably was. And so like you, I have gotten serene and comfortable. No matter what happens, I dismiss it as something that I cannot understand and only feel sorry that it happened. I used to try and reform the conditions which I thought needed reforming. But the reformer, like the pioneer in any line, is usually a 'boob' with a club foot where his gray matter should be."

The people of the United States spend $715,000,000 annually for drugs and medicines, which constitutes about 20 per cent of the national bill for sickness. Of this amount $190,000,000 (26.6 per cent) is spent for medicines prescribed by physicians; $165,000,000 (23.2 per cent) for non-secret home remedies and $360,000,000 (50.3 per cent) for "patent medicines" of secret composition. These facts are brought out in a report just issued by the Committee on the Costs of Medical Care of which Dr. Ray Lyman Wilbur is chairman. It was discovered that the average expenditure for medicines is approximately $22 annually per family of four persons or $5.50 per member. Actual expenditures per capita vary widely, however, and tend to be highest in the cities. Drugs prescribed or dispensed through doctors do not constitute a large portion of the total costs of medical care. Physicians' prescriptions plus the drugs dispensed in doctors' offices average approximately $1.50 per person per year. "It is significant," the report reads, "that the costs of medicines to patients are still lower when the conditions of treatment permit a physician to prescribe only such medicines as he considers necessary to good results." Such conditions exist, according to the report, where medical service is rendered on an "annual" rather than a fee basis, as in industrial or university health services.

At the annual meeting of the American Medical Association in New Orleans in May a significant resolution is to be presented to the House of Delegates which indirectly pays a compliment to the American Dental Association and the Committee on the Study of Dental Practice. The resolution calls upon the Board of Trustees of the American Medical Association to immediately institute a survey on health insurance and sick benefits and their effect on medical practice. The committee on the Study of Dental Practice has been working for several years in order to make available scientific, accurate data on certain phases of dental practice and the relationship of the profession to society. Some opposition was apparent because the committee accepted funds from the American College of Dentists to finance a study of health insurance in Europe, a study which appeared important but for which no funds were available from the American Dental Association. The importance of this study may take on added significance since this resolution to be presented at the American Medical Association meeting calls attention of the delegates to the fact that the American Dental Association has, through its own representatives made a study of health insurance systems in Europe and their effect on practice; while the only data available to the physician comes from outside sources and may often be biased.

NECROLOGY

Walter O. Henry, Los Angeles; native of Illinois; Bellevue Hospital Medical College, 1879; practitioner at Pawnee City for a number of years before locating at Omaha about 1890 and engaging in the practice of surgery; founder of the Presbyterian hospital and of the Omaha General hospital which was later merged with the Lord Lister hospital; for a number of years professor of gynecology at Creighton College of Medicine and gynecologist to St. Joseph's hospital; active while in Omaha in church, mission and Y. M. C. A. work; former honored member, Nebraska State Medical Association and active in its councils and its scientific work for many years; died in Los Angeles after a long illness traceable to an automobile accident sustained six years ago, March 21, 1932, aged seventy-four years. He was a brother of Dr. E. C. Henry of Omaha. A widow and three sons survive.

Addison L. Ambrose, Guide Rock, Nebr.; University of Michigan, Homeopathic Medical Department, 1882; not in practice; died at Long Beach, Calif., where he and his wife had been spending the winter, aged seventy-seven years.

James M. O'Connell, Ponca, Nebr.; Rush Medical College, 1881; practitioner at Ponca for over fifty years; one of the foremost physicians in northeast Nebraska for many years; member, Nebraska State Medical Association for nearly fifty years; an upstanding man and a power in the community; died April 14, 1932, aged about seventy-nine years.

Albert Lynch, Fairbury, Nebr.; University of Michigan, Medical School, Ann Arbor, 1901; practitioner at Fairbury twenty-six years; specialist in surgery; owner of hospital and a clinic; actively interested in the civic affairs of his community and state; mayor of Fairbury for a number of terms; died after a short illness, April 18, 1932, aged sixty-three years. Dr. J. Harold Lynch, Fairbury, is a son.

William F. Dugan, Campbell, Nebr.; Illinois Medical College, 1903; Lincoln Medical College, 1904; practitioner at Ulysses till 1909, thereafter at Grand Island until 1912, when he located at Campbell; member, Nebraska State Medical Association; prominent in masonry; died April 19, 1932, after a year's illness, aged about fifty-one years. A widow and son survive.

NEBRASKA TUBERCULOSIS ASSOCIATION MEETING

The Nebraska Tuberculosis Association is planning a meeting to be held at the State Hospital at Kearney during the first week in June. It will only be an afternoon meeting with a clinical program pertaining to tuberculosis. Two or three outstanding men from a distance will make up the program largely if not entirely. Two of these will probably be Dr. J. A. Myers of Minnesota, and Dr. Cameron Haight, associate of Dr. John Alexander of the Department of Thoracic Surgery at the University of Michigan.

Difficulties up to the present have prevented me submitting a definite date or speakers, but we will appreciate a preliminary notice of the meeting such as you may be able to give us.

—John F. Allen.

"There's no telling how long Methuselah might have lived if he had had his appendix, teeth and tonsils out, used the right brand of tooth paste and smoked coughless cigarettes."

AUXILIARY PROGRAM AND NOTES

The high light of this year's convention in Lincoln will be the speech by Dr. Carl Menninger of Topeka, Kansas, on "Factors in a Happy Marriage as Viewed by a Psychiatrist." Dr. Menninger is the author of various articles on Mental Hygiene in the Ladies Home Journal.

Tuesday, May 24, 1932

9:30—Executive Session. Headquarters, Lincoln Hotel.
12:30—Dutch Treat Luncheon for Auxiliary Members, Headquarters.
2:00—Annual Business Meeting.
Evening—Theatre Party.

MRS. MORRIS NIELSEN
President Woman's Auxiliary,
Nebraska State Medical Association

Wednesday, May 25, 1932

9:30—Trip through Capitol Building.
12:00—Breakfast at Shrine Country Club. Dr. Carl Menninger, Speaker.

Thursday, May 26, 1932

9:30—Executive Sessions, Headquarters.

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The Lancaster County Auxiliary held its annual business meeting following a luncheon at the University Club on Monday, April 11th. Mrs. Harry Flansburg was elected president; Mrs. J. M. Woodward, vice president; Mrs. Everett Angle, secretary, and Mrs. Elmer Hansen, treasurer.

* * * * * *

For those doctors' wives privileged to attend the American Medical Association meeting at New Orleans and the National Women's Auxiliary there is offered a vast array of entertainment in that quaint old southern city. There is first a National Board Dinner; a Buffet Luncheon at Jerusalem Temple; a walk through Vieux Carre; Tea at Patio Royal; Auxiliary Luncheon at Southern Yacht Club; Glimpses through New Orleans; Teas in Private Residences; Buffet Supper at New Orleans Country Club; Round Trip over Lake Ponchartrain; Trip to Battle Field of New Orleans; Delgado Museum and City Park; Mayan Exhibit; President's Reception and Ball; Trip to Gulf Coast.

The Kansas Auxiliary Chairman of Press and Publicity will be glad to have me tell you that in addition to valuable scientific articles, the Kansas Medical Journal carries a series of charming "Letters from a Kansas Doctor to His Son in College," by Dr. John A. Dillon of Larned. Perhaps these letters go far afield from medicine, but there are resulting forces at work, which make it easy for the subscriber to "take those Journals home to his wife." So the Auxiliary is twice blest in these letters.

* * * * * *

When you—the many of you—are in New Orleans, May 10-16, and are looking at the "exhibits" from the various state auxiliaries, your attention will be arrested by the unique and very clever "Formula" from Philadelphia. It must be seen to be appreciated, and its designer, Mrs. Wilmer Krusen, will understand the compliment implied when you construct a pattern of it to take back to the home auxiliary. It constitutes a most alluring invitation to attend the auxiliary meetings and share activities.

* * * * * *

The California Auxiliary is sponsoring a contest in which we may not enter but which holds our interest. Prizes, $25.00, $15.00 and $5.00 are offered for the three best papers on "Educating a Doctor's Wife." The contest is open to any doctor in California in good standing in the state society, his wife and children. Length from 200 to 500 words. The winning papers will be read at the convention the first week in May. Look for these at New Orleans, too.

* * * * * *

Oklahoma county has a roster of 137 names. Of these 95 are paid up members. This county auxiliary meets the fourth Wednesday of the month for an all day session. The members sew for the crippled children's hospital, make scrap books for the same institution, co-operate in Red Cross work, and have lunch together. Personal contact is made with the Red Cross, City Nurses Bureau, Crippled Children's Hospital, Parent-Teacher groups, and the Public Welfare Center.

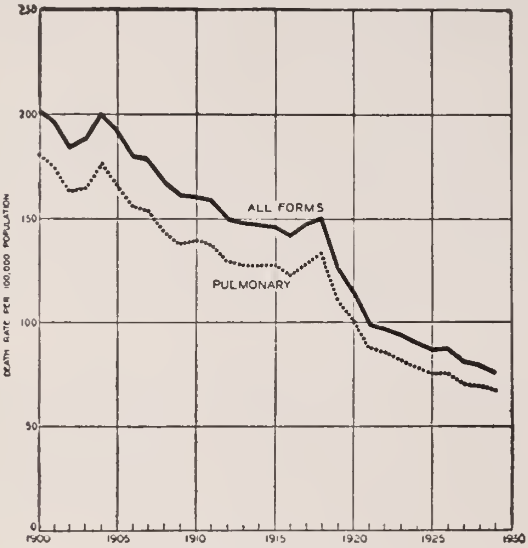
TUBERCULOSIS ABSTRACTS

Newspapers thrive because man's appetite for the new is insatiable. Yesterday's happenings taste flat today and are forced off the front page to make way for today's latest gossip. In medicine, news is as eagerly embraced. Not, however, to satisfy a childish desire for the novel but rather because existing knowledge is never complete enough to satisfy. Our fight against tuberculosis is, at best, a compromise because our diagnostic and therapeutic weapons are still inadequate. We need new knowledge to supplement the old. In fact, every doctor owes to his patient the obligation to keep abreast of the times. David A. Stewart, veteran pioneer of the tuberculosis movement in Canada, recently reviewed advances made in tuberculosis, excerpts of which are here presented.

WHAT IS NEW IN TUBERCULOSIS

The strategy of our campaign against tuberculosis is new. Our old objective was to heal the sick man who came to the doctor of his own accord because he was sick. He seldom came early because he had few symptoms or none. Our new objective is to find the men, the women, and especially the children who have been in contact with the sick man. Management of the individual case is not enough; we now ask, "Who have been seeded by this man's infection, and what can we do for them?"

The kinds of people we have to diagnose are new. When the doctor goes scouting among contacts he finds that all his decisions are more difficult. He finds also that "the fountain pen is mightier than the stethoscope" because the history of tuberculosis in the family is so important. Probe deeply with your pen; nor be satisfied until you have all the family chest portraits in your x-ray album. Grandmother's "stomach cough," when the x-ray has passed upon it, may explain the indefinite illnesses of half a dozen grandchildren.



TUBERCULOSIS DEATH RATES
U. S. REGISTRATION AREA—1900-1929

NEW IN DIAGNOSIS

A revolutionary change in diagnosis is the comparative eclipse of the stethoscope by the x-ray plate. The stethoscope is still useful but not an instrument of precision. It leaves half of our chest problems untouched. It can but rarely find early tuberculosis and probably never earliest tuberculosis. It cannot follow at all accurately the progress of disease or of healing. Nearly all the questions we need to ask are answered more clearly by the x-ray plate. Of course the x-ray plate must be well made and well read lest blind leaders lead the blind into diagnostic ditches.

Opaque oil, such as lipiodol, is a wonderful help in differentiating from tuberculosis a condition which is considered rare but which is really common, namely, bronchiectasis. This new diagnostic measure has had its full share of misuse and misinterpretation.

The bronchoscope is coming more into use as a chest instrument but has still a broad field to cultivate.

Examination of the sputum is as essential as ever. But now we are not satisfied with a single or a dozen negative findings, for that settles nothing. Now we incubate and grow the germs on potato medium.

The tuberculin test is perennially new, and it is more prognostic than diagnostic. A tuberculin reaction in an adult is something like a vaccination scar. When a young child reacts to tuberculin he should be thoroughly examined and closely watched, and his whole household examined too.

NEW IN TREATMENT

"Outdoorness" is not a specific for tuberculosis but a natural advantage which all living people should have, especially the chronically sick. Sunlight treatment is still empirical but useful as a general tonic. He who would use it safely must know its indications and contraindications, its therapeutics, dosage and toxology. Light has been over-praised and abused. It should be applied in measured doses, in well selected cases and always watchfully.

Rest is still the great basis of all treatment of tuberculosis. Fatigue makes ill; rest makes well. Tuberculosis can be cured, but the prices to pay are time and patience, and the foundation is rest. But at last pulmonary tuberculosis has found a "specific." It is collapse or compression of the diseased lung or lungs, which is simply a local application of rest. Artificial pneumothorax is not new but the widening of its scope is. Phrenic paralysis to raise the diaphragm and thoracoplasty to collapse the chest wall are new and their scope widens daily. Artificial pneumothorax is being applied earlier and earlier and later and later. Using it in early stages is not using a sledge hammer to drive a tack, because pneumothorax is not a sledge hammer and any definite focus of tuberculosis is not a tack. Pneumothorax has no features that can be called bad, except the formation of fluid in some cases. The best indication is the lack of contraindications and there are no contraindications. Hemorrhages or expectoration with bacilli or beginning cavitation—even a small cavity—urge pneumothorax.

In late, neglected, or advancing disease the prognosis goes up many points when collapse is possible for the worse lung, and is improved even more proportionally when both of two bad lungs can be collapsed. We now freely apply some collapse to both lungs and even put men with double collapse to work. The more passive measures called taking the cure must now be supplemented by active measures of giving the cure. "Milk, eggs, and the back verandah" never was a reasonable formula and now is hopelessly obsolete.

NEW ABOUT COMPLICATIONS

We believe now that tuberculosis in the intestine is almost as treatable and curable as tuberculosis in the lung—if we make the diagnosis and apply the treatment soon enough. Early diagnosis of tuberculous enteritis can be made only by the x-ray. The author gives barium meals as a routine in all cases of pulmonary tuberculosis. Treatment is begun early and the old picture is seldom seen except in a patient neglected to sheer hopelessness before treatment is begun. Treatment includes a smooth diet, light therapy, and all general measures made more intensive.

The larynx is the doorstep of the lung. Good treatment for the lung is the best element in treatment of the larynx. Collapse treatment has done much to reduce tuberculosis in the larynx from a major complication almost to a minor one. Add to that rest, silence, and sun applied carefully.

The red terror of hemorrhage is tamed. Half the pharmacopeia has been tried and has failed or done harm. The worst modern mistreatment of hemoptysis is morphine, though a little heroin to modify (not stop) cough is valuable. Ice bags on the chest are of the devil. The modern treatment for hemorrhage is rest, reassurance, a little heroin, mild laxatives, bland foods—and the specific. The specific is collapse therapy.

NEW LIGHT ON CHILDREN

Most important of all is the new light on tuberculosis in children. Our ideas about children lagged a generation behind our knowledge about adults, chiefly because we had a single standard for measuring disease in the adult and the child. But the two types are almost two diseases, so different that they have little more than the causal organism in common. Diagnosis, treatment, and prognosis all differ as between the young and the older. Symptoms in the childhood type are absent or slight and no single symptom is pathognomonic. The physical examination cannot disclose it. But the great new light is shed by the x-ray.

"The discovery of the child in tuberculosis opens up a great new continent for exploration. It is in this new continent of childhood that the most fruitful exploration of the anti-tuberculosis forces will be made during the next generation. * * What we wish to do for the race must be done for the child. On their behalf we must even learn a good part of our tuberculosis all over again."

What is New in Tuberculosis, David A. Stewart, The Canadian Med. Assn. Jour., January, 1932.

THE SOCIETIES

The **Madison Six County Medical Society** held the March meeting on the 22, at Hotel Norfolk following a dinner, about forty-five being present. Program follows: "Chronic Arthritis, Its Treatment," Dr. Geo. W. Covey; "Diabetes Mellitus, a Review of Cases," Dr. Floyd L. Rogers, Lincoln.

Dr. Covey devoted his talk to Chronic Infection Arthritis which has received a good deal of attention lately by the autogenous vaccine treatment. The principles of the treatment by vaccines consists of giving small doses, avoiding noticeable reactions so as to leave a feeling of well being. Doses ranging from a maximum of 100,000 down to 5,000 killed bacteria, are used and treatment is continued from one to two years.

Dr. Rogers gave an analysis of fifty cases of diabetes, illustrated by numerous charts. He stressed the fact that all cases of glycosuria are not cases of diabetes. Both talks were unusually well received.

The **Saunders County Medical Society** held its regular monthly meeting March 21 at Wahoo, following a dinner at the Blackstone cafe. Dr. George Covey, Lincoln, gave a paper on "Arthritis," and Dr. L. S. McGoogan of Omaha gave a paper on "Prenatal Care". The papers were much appreciated and generously discussed.

—C. W. Way.

The **Cheyenne-Kimball County Medical Society** held its March meeting at the Kimball hospital, Kimball. Dr. H. L. Lucic of Cheyenne, spoke of "The Causes of Blindness," and Dr. W. P. Hudnett of Scottsbluff on "Infection." A general discussion of the two papers added to the liveliness of the meeting and made it one of the best ever held.

—A. R. Everett.

The **Northwest Nebraska Medical Society** was held at Chadron, March 11. This was the annual meeting and Dr. George A. Griot was elected president and Dr. A. J. Courshon, secretary-treasurer.

The **Red Willow County Medical Society** was held at McCook following a stag banquet at the Keystone hotel March 24. The following program was carried out:

"Some Eye Conditions in Relation to General Practice," Dr. G. D. Conwell, McCook, discussion by Dr. J. S. Hill, McCook; "Puerperal Sepsis," Dr. F. M. Karrer, Palisade, discussion by Dr. E. F. Leninger, McCook; "Thrombosis of the Superior Mesenteric Artery," Dr. George Hoffmeister, Imperial, discussion by Dr. C. R. Carlson, Wauneta.

The March meeting of the **Otoe County Professional Society** on Monday night was turned into an impromptu affair with case histories, round table discussions and nonsense the chief forms of entertainment.

Dr. Roland Loder, Syracuse, presented a case history of a simple fracture from which the patient developed various complications which caused her death. Two histories were presented as recorded by the "Soodo Society," mythical society and the reports were entirely nonsensical.

Dr. J. T. Meyers and Dr. Frank Conlin of Omaha addressed the **Otoe County Professional Society** on bacteriology at the April meeting, on the 11th, in St. Mary's hospital, Nebraska City. The meeting was presided over by Dr. D. D. Stonecypher, president.

"Interesting Points in Bacteriology" was the subject discussed by Dr. Meyers, who is in the department of bacteriology at the University of Nebraska college of medicine. His paper dealt with the fundamentals of bacteriology.

Dr. Conlin spoke on "Application of Bacteriology to Clinical Medicine." His paper was illustrated with lantern slides. He showed figures and charts that illustrated the great advance medicine has made in the past years in prolonging life, especially in regard to flu and pneumonia. Experiments in bacteriology have proved a boon to the medical profession, he said, and have kept down high mortality rates.

The **Cass County Medical Society** held its regular meeting April 5 at the Rest Haven hotel in Weeping Water.

The program was given by Dr. C. R. Kennedy and Dr. Rodney Bliss, of Omaha. Dr. Kennedy's subject was "Urological Diagnosis" and Dr. Bliss' subject was "Nephritis."

The society voted to have a picnic their next meeting which will be held in June. The place for this affair has not been chosen as yet but will be announced in the near future.

The **Fillmore-Saline County Medical Society** held the April meeting at Milligan, April 11. Drs. S. O. Reese and O. A. Reinhard, Lincoln, spoke on "Diseases of the Colon."

HUMAN INTEREST TALES

Dr. J. R. Bell was elected mayor of Fairfield, at the spring election.

Dr. H. N. Morrow was elected president of the Fremont Rotary club recently.

It is reported that Dr. G. O. Remy, Ainsworth, is writing a history of a portion of the Civil war.

Dr. Victor Norall, for a short time in practice in Omaha, has located at Lexington.

The marriage of Dr. Donald J. Wilson and Miss Bernice Elizabeth Zimmerman, Omaha, is announced.

Dr. C. K. Gibbons, Kearney, explained the x-ray to a group of Pre-Medic students at the State Normal school in April.

Dr. Adolph Sachs, Omaha, has been reelected a member of the board of governors of the American College of Physicians.

The children of the Nebraska Orthopedic hospital tendered Dr. H. W. Orr, chief surgeon, a birthday party on St. Patrick's day.

It is reported that Dr. C. A. Roeder, Omaha surgeon, has perfected an arm support for use of patients undergoing operation.

A Crippled Children's clinic is to be held at Norfolk, June 9, sponsored by the Madison Six Counties Medical society and the Elks.

Dr. D. T. Quigley spoke before the Concord club recently on a back-to-nature health program, advocating the greater use of raw foods.

Dr. A. R. Kintner, formerly of Nehawka and Nebraska City, has become connected with the Western Montana clinic at Missoula, Montana.

Dr. H. J. O'Donnell, Paxton physician free of an arson charge on account of insanity, has been committed to the Hastings State Hospital.

BOOKS RECEIVED

SURGICAL PATHOLOGY OF THE FEMALE GENERATIVE ORGANS by Arthur E. Hertzler, M. D., Surgeon to the Agnes Hertzler Memorial Hospital, Halstead, Kansas; Professor of Surgery, University of Kansas. Octavo. 346 pages. 285 illustrations. Published by the J. B. Lippincott Co., Philadelphia, 1932. Price $5.00.

SURGICAL ERRORS AND SAFEGUARDS by Max Thorek, M. D., Surgeon-in-Chief, American Hospital, Chicago. Foreword by Arthur D. Bevan. Large Octavo. 650 pages. 669 illustrations, many colored. Published by the J. B. Lippincott Co., Philadelphia, 1932. Price $10.00.

FERTILITY AND STERILITY IN MARRIAGE, Their Voluntary Promotion and Limitation by Th. H. Van De Velde, M. D., former Director of the Gynaecological Clinic at Haarlem, Holland; translated by F. W. Stella Browne. 10 mo., 448 pages, cloth binding, published by Covici Friede, New York. Price $7.50.

(This book, because of its scientific character and because of the legal restrictions placed upon its distribution, is available only to duly licensed physicians on their written or authorized order.)

MODERN GENERAL ANESTHESIA by James G. Poe, M. D., lecturer on General Anesthesia in the Medical and Dental Department of Baylor University; Anesthesiologist of Baylor University Hospital of Dallas; Consulting Anesthetist to the Shriner's Hospital for Crippled Children, and Parkland Hospital, Dallas Texas. Second edition, completely revised and enlarged with twelve illustrations and two charts. 231 pages, 6 mo., cloth cover. Published by the F. A. Davis Company, Philadelphia, 1932.

RECENT ADVANCES IN NEUROLOGY by W. Russel Brain, M. A., D. M. (Oxon), M. R. C. P. (London): Assistant Physician to the London hospital, etc., and E. B. Strauss, B. A., B. M., B. Ch. (Oxon), M. R. C. P. (London), Clinical Assistant to the Neurological and Psychiatric Clinic of the University of Marburg, etc. Small Octavo, cloth, 429 pages, with 39 illustrations. P. Blakiston's Son and Co., Philadelphia.

A SURVEY OF THE MEDICAL FACILITIES OF THE STATE OF VERMONT, by Allon Peebles, Ph. D. Prepared under the direction of the Committee on the Cost of Medical Care. University of Chicago Press. Price $1.50.

MIDWIVES, CHIROPODISTS AND OPTOMETRISTS, and Their Place in Medical Care, by Louis S. Reed, Ph. D. The University of Chicago Press. Price $1.00.

BOOK REVIEW

A DOCTOR OF THE 1870's AND '80's: William Allen Pusey, former president of the American Medical Association and of the American Dermatological Association. Small octavo, pale green board cover, 153 pages, $3.00. Charles G. Thomas, Publisher, Springfield, Ill.

This is a volume full of compelling human interest. It may be particularly so to this editor and reviewer, since the life of the subject of the sketch, in a Kentucky rural community, was almost identical with his own on the middle western border after the Eighties—saddle bags, operating case, devotion to duty, system, pioneer surgery, limited use of drugs, etc., etc. This editor had in mind for a number of years publishing a book the title of which should read "A Prairie Doctor of the Eighties." Had he done so it would have been almost identical with this volume. Dr. Pusey has spared us this effort.

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CONTENTS

Page
The Present Trends in Medicine, Arthur E. Cook, M. D. 221
Analysis of Results in 411 Consecutive Cases of Perineal Prostatectomy, Edwin Davis, M. D. 224
Spinal Anesthesia, Part II, Charles H. Arnold, M. D. 230
Reconstruction Procedures in Traumatic Lesions of Bone and Joint Where Conservative Methods Fail, Herman F. Johnson, M. D., F. A. C. S. 234
Artificial and Pseudo-Voice Following Complete Laryngectomy, Philip L. Romonek, M. D., F. A. C. S. 238
Nebraska Hospitals and Their Relation to the Practitioner, Francis J. Bean, M. D. 243
Myomectomy During Pregnancy: A Case Report, Charles O'Neil Rich, Earl C. Sage, H. D. Lee 250
Precipitation of Acute Thyroidal Symptoms by Operation Elsewhere in the Body, Max Emmert, M. D. 253
Perforation of the Uterus in Attempted Self-Induced Abortion, C. H. Waters, M. D., F. A. C. S. 253
Urticaria Solare, L. J. Owen, M. D. 254

Editorial—

Page
Insurance Against Auto Accidents Should be Payable to Hospitals and Surgeons 256
A Medical Editor Looks at the Iowa Meeting 256
Echoes of the New Orleans Meeting 257
Lest We Forget Hospitals Are Built for Service for Rich and Poor Alike 257
Recommendations Made for the Future of Pharmacy 259
A Minister Looks at the County Physician Problem 259
Dr. Charles C. Snowden, Fifty Years at Davenport, Nebr. 260
Severe Smallpox Still Occurs in Nebraska 260
Obstetrical and Gynecological Hints. No. IV 260
Dermatologic Hint No. IV 260
Editorial Paragraphs 261
Necrology 262
Auxiliary Notes 262
Tuberculosis Abstracts 263
Schedule Post Graduate Course University of Nebraska College of Medicine 265
The Societies 266
Human Interest Tales 267

THE PRESENT TRENDS IN MEDICINE*

ARTHUR E. COOK, M. D.,
President, Nebraska State Medical Association,
Randolph, Nebr.

At the present time we find ourselves in a state of more or less confusion and clear thinking is not an easy matter. There have been so many wonderful discoveries and inventions during our own era that it has plunged a good many of us into a state of more or less confusion and some of us sometimes wonder if it is all for the best interests of the human family, as a whole, and whether these inventions and discoveries have added to the sum total of human happiness.

I find myself in much the same status, this evening, as one of the three blind men who tried to describe a large elephant. One of them examined the elephant's leg and described the elephant as resembling the trunk of a tree. Another felt of the side of the elephant and described him as resembling a wall. The third one felt of his tail and described him as resembling a rope. The subject I planned to speak about this evening is such an elephant of a subject that to do justice to it would require a series of talks to take it in comprehensively.

However, I will endeavor to call your attention to a few straws which seem to indicate the present direction of the prevailing winds of medical economic affairs of today and the best I can hope to do is to simply touch lightly on some of the most outstanding features of the present situation.

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*Presidential Address, given at the Annual Meeting Nebraska State Medical Association, Lincoln. May 25, 1932.

It is my firm belief that we are face to face with a situation that is very likely to revolutionize the practice of medicine as it has been practiced during the past generation and, it may be because I am getting old enough to view all forms of reform with more or less suspicion, I cannot help but wonder if it will not detract from the usefulness of the general practitioner. Certainly any form of public health insurance practice cannot help but detract from the close relationship that has existed between the good old family doctor and his patients. Will a change be for the better? The day of individualism, of the close relationship between the doctor and his patient, seems to be rapidly drawing to a close and I don't know whether it is a real benefit to humanity or not. Let us hope it will be.

It may not be out of place for me to note, briefly, some of the more outstanding advances that have been made in medicine during my short career (34 years) in it. When I began the practice of medicine typhoid fever was a more or less constant factor with which we had to deal. Its prevalence during the Spanish-American War numbered its victims by the thousands, and although the army medical officer possessed sufficient knowledge, at that time, to have prevented thousands of cases of the disease, he was not listened to and the line officers of inferior rank often overruled and overrode the medical officer of superior rank in regard to camp sites, camp hygiene and camp sanitation. All this is now changed and as a result, typhoid fever in the army during the World War was practically nil. If the lay people could be educated to the extent that they would seek vaccination against typhoid fever and subject themselves to proper sanitary control, the disease could be eliminated. As it is, there are still something like 50,000 cases of typhoid fever per year in the United States.

Diphtheria could also be almost entirely eliminated but we have about 350,000 cases per year.

Yellow fever has been practically eliminated. Small pox could be eliminated. Tetanus could be practically eliminated. X-ray and radium are both discoveries of my life time. The cause of hook-worm disease of the South is another discovery of the present generation and hook-worm disease could be practically eliminated under proper control, and yet it is endemic in certain southern districts.

At the beginning of my career in medicine the death rate of tuberculosis was 1745 victims to every 100,000 population. In 1929 it was 647, a reduction of about 65%. The typhoid fever death rate in 1900 was 313 and in 1929 it was 16. The death rate was 134 from measles in 1900 and in 1929 it was 25. The scarlet fever toll was 96 in 1900 and in 1929 it was 19. The death rate from all causes in 1900 was 17.195 per 1,000,000 population and in 1929 it was dropped to 12,342, a saving of 4,852 lives to each million of population.

I could go on, for some time, enumerating the achievements of the past 35 or 40 years but these few citations will be sufficient to indicate, in a small measure, the trend of advancement in medical science in the past generation. Indeed, advancement has been so rapid, and so much progress has been made, that it is often a difficult matter for the modern doctor of medicine to sell to the public—and thus make use of—all the knowledge he possesses because, the application of all of that knowledge requires an expense which is prohibitive to so large a proportion of patients,—in a rural practice,—that the doctor cannot afford to equip himself thoroughly for all that he knows how to apply.

The result is that he attends to such cases as he can and make a sufficient profit to enable him to live in fairly good circumstances and he sends a certain per cent of cases to his colleagues in the city who have enough of that particular class of patients, referred and otherwise, to enable them to properly equip, and maintain, facilities for the handling of these special cases. This would not be so bad, in itself, but it is often the cause, in these days of rapid transit, of the patients take matters into their own hands by going away to see some high priced man when it isn't necessary. I have had patients go to the city to have an ordinary boil treated by a high priced doctor and I could do it just as well at a fraction of the cost at home. I believe it to be a fact that the middle class of people often fail to discriminate between comforts and luxuries and they thus often pay more than is necessary for their medical attention.

This leads me to the real gist of what I have to say and that is, that I believe we are today face to face with a problem, in the application of our art, which may revolutionize the practice of medicine in the United States. Much time and study has been, and is being, given to the question of the doctors' pay and the medical profession has been most severely and bitterly censured because of the present condition of affairs as regards the cost of medical care, while as a matter of fact, the doctors of medicine are actually paid less for their services than any other class of equally trained men in the world.

A committee was appointed five years ago to investigate the cost of medical care and they are supposed to make a final report this year. Newspapers and magazines are, and have been, printing articles, some of which censure the medical profession severely. Some of this may be just. No doubt, some of it is unjust.

Germany was the first country to inaugurate a system of governmental health insurance and they did it without consulting the medical profession. The result is far from satisfactory from the viewpoint of the doctors, at least, as fees are so reduced that, to make a living, the doctor has to see so many patients that it is impossible to treat his patients carefully and scientifically, and a great amount of the doctor's time is spent in clerical work, and, by long hard hours, he can only make a fairly decent but not a comfortable living.

England consulted her medical men before adopting a system of health insurance with the result that her doctors are a little better off than the German doctors and can make a fairly comfortable living. But their system is not entirely satisfactory.

Saskatchewan, Canada, has a "municipal doctor" system in which each family is taxed $7.50 to $10.00 per annum and it is working out quite satisfactorily to both patients and doctors, so far as I am able to learn. Especially is this true in the smaller and less populous communities where actual suffering formerly resulted from a lack of sufficient medical attention.

The tendency of medical men to crowd into the more populous centers of our country makes it a fact that some of our rural districts have poorer medical services today than they had a generation ago, and this condition may become acute enough so that some such measures will be necessary as now exist in our neighbor's country to the north of us.

Mr. R .L. Duffers, staff writer for the New York Times, in an article published in the October, 1931, issue of the North American Review, closes his article with this significant statement:

> "More extensive medical care we must have. It will be voluntary and cooperative in its organization, or, it will be bureaucratic. Pure individualism has had its day."

After a careful study of the situation it seems that only about 10% of our population are able to pay for the best medical care without suffering from financial embarrassment and the making of more or less serious sacrifices. About 33% are unable to pay anything at all and are treated by the free clinics of the country in which the doctor donates his time and skill. This leaves about 57% of the people who are not paupers an do not want to become paupers. Yet, they are unable to pay all of the cost of treating a serious illness or injury. The result is that one of two things happens. Either they accept proper medical care and the doctor donates a part of it or, they deny themselves necessary attention because of their inability to pay, and suffer as a result. One serious run of sickness may, and often does, wipe out the savings of a life time and frequently reduces a family to a lower standard of living, thus interfering with the future prospects of growing boys and girls.

In my opinion something is going to be done about this state of affairs. In many instances something is being done at the present time. Some of these things are fairly satisfactory. Some of them are highly objectionable. Here, then, is an opportunity for some individual to achieve undying fame by working out some system that will afford all the people the best of medical care when they need it, pay the doctor a reasonable fee for his services, and most important of all, NOT retard the progress of scientific medicine.

As I have already stated, there are numerous instances in which various organizations are now in operation, designed to look after, care for, and furnish adequate medical attentions to their members if they fall ill or meet with accidents. At the present time there are about 95 American colleges and universities which provide medical and nursing services to their students on an annual fee basis. As an example, the University of Michigan furnishes such care to some 12,000 students at an annual cost of $10.00 per student. Many industrial corporations do the same thing either free or on an annual or monthly payment basis. Not all of these are satisfactory from the doctor's point of view. The Endicott Johnson Corporation may be mentioned as furnishing complete medical care to some 41,000 employees, in normal times, at an annual fee of $25.00 per family. This includes the care of a general practitioner, a specialist when necessary, nursing care in the home or hospital, and a dentist.

Workmen's compensation laws are in effect in practically all of our states.

An incorporated concern in Los Angeles has undertaken to furnish both medical and hospital care on an annual fee basis. The idea has also been tried in the eastern states but, fortunately for the medical profession, a legal license to an incorporation, to engage in the care of the sick, i.e., practice medicine by paid individuals—doctors—has been quite properly denied.

The dentists in our neighbor state of Iowa ran against this snag a few years ago and had to "back up" a bit.

Grinnell, Iowa, has a community hospital which offers hospital care to the extent of board, room and regular nursing, to an individual at a yearly fee of $8.00; man and wife at $12.00 per year; man, wife and one child at $17.50 per year, and an additional fee of $2.50 each additional child. This leaves the doctor free to collect his own fees.

Battleboro, Vermont, has a hospital association which charges an annual fee of $5.00 for a single individual and $7.50 for man and wife. In return it furnishes hospital care, doctors fees, and all other costs, amounting to $30.00, or over, and up to $300.00. Such a plan, it seems to me, might prove quite unsatisfactory in actual practice.

These are some of the straws, which it appears to me, seem to indicate the present trend of public opinion in regard to the future practice of medicine. If you like it, all well and good. That's fine. If you don't like it, it is high time that you and I and all of us apply to this question the necessary thought and study that will make it more to our liking. But whether we like it, or whether we don't like it, it is most surely coming.

In closing my remarks, I find myself in somewhat similar circumstances as was the tired, sleepy little girl who sleepily went through with her evening prayers before retiring and finally wound up thusly: "Please, Lord, accept and excuse, these prayers because it's the best you can get out of me tonight."

ANALYSIS OF RESULTS IN 411 CONSECUTIVE CASES OF PERINEAL PROSTATECTOMY*

EDWIN DAVIS, M. D.,
Omaha, Nebraska.

In determining what the operation of prostatectomy has to offer the patient, the two chief factors for consideration are risk and results. Accuracy in diagnosis and perfection in surgical technique are of no avail, unless the patient may be given reasonable assurance of recovery from the operation, and relief from symptoms. The following presentation has to do with a summary of (1) the immediate operative results, and (2) the late functional results, in a consecutive series of 411 cases of perineal prostatectomy under sacral block anesthesia. These cases are suitable for comparison and tabulation, since each one has been similarly handled as regards preparatory drainage, choice of time of operation, anesthesia, operative technique, hemostasis, and post-operative care.

IMMEDIATE OPERATIVE RESULTS

Table I represents the immediate operative results, with particular reference to mortality. The total number of post-operative deaths, including all deaths from any cause whatever**, during the patient's stay in the hospital, was nine (2.17%). There were no anesthesia deaths, since none occurred earlier than the sixth post-operative day. The latest death, due to old age, lack of resistance, and sepsis, associated with the formation of a large abscess in the calf of the right leg, occurred on the thirty-ninth post-operative day. The causes of death were late general sepsis (3 cases), renal insufficiency (3 cases), pneumonia (1 case), pulmonary embolus (1 case), and acute cardiac decompensation (1 case).

TABLE I

PERINEAL PROSTATECTOMY UNDER SACRAL ANESTHESIA: IMMEDIATE RESULTS

Total Consecutive Cases	411
Average Age	70
Above Eighty	25
Deaths	9
Mortality Rate	2.17%
Total Consecutive Cases with No Deaths	121
Sacral Anesthesia (Consecutive cases without failure)	262
Rectal Injury	2
Post-operative "Shock"	0
Delayed Hemorrhage (several days)	10
Epididymitis	48

There seems to be justification for the opinion that the chief factors contributing toward maintaining a conspicuously low mortality rate in prostatectomy are (1) adequate preliminary drainage, (2) the perineal route, (3) detailed attention to hemostasis, and (4) sacral block anesthesia. There is no occasion for remarking upon the necessity of the first and most important of these (adequate preliminary drainage) before this audience. In this series, preliminary drainage has probably been overdone in many instances, and has been omitted in no instance, regardless of the patient's apparent excellent general condition. The minimum drainage period, arbitrarily chosen, has been ten days. A number of these patients have been returned home with suprapubic drainage tubes for a period of months.

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*Read before the Annual Meeting of the Twelfth Councilor District Medical Society, Alliance, Nebraska, October 2, 1931.

**One additional death, which occurred on the fifty-first post-operative day (from renal insufficiency), I have considered could be honestly and properly excluded from the series, since this patient was up and fully dressed during the third post-operative week, and had been given permission to leave the hospital. Although the incision was entirely healed, and the urine passing normally per urethra, this patient voluntarily chose to remain in the hospital, awaiting more complete convalescence. Unquestionably this patient, able to walk, fully dressed, in the hospital corridor, had survived the prostatectomy.

Comparative figures show that the perineal route carries with it a lower hazard than does suprapubic. It is my opinion that, if for no other reason, this is because abdominal distention or adynamic ileus, so common following suprapubic or abdominal operations, is comparatively rare following operations upon the perineum, whether for prostatectomy, or for other purposes. In the entire series, this distressing and serious post-operative complication has been conspicuously absent.

Immediate post-operative hemorrhage, in every case, has been controlled by means of a combination hemostatic and drainage bag, a detailed description of which has been previously submitted(1). This rubber bag, inflated with air and maintained in place in the prostatic cavity by means of counter-traction against the perineum (without traversing the urethra), provides hemostasis both during and after the operation. Also in each case, a careful attempt was made to clamp and ligate bleeding points around the bladder neck. For this latter purpose, an excellent opportunity for deliberateness was provided by the elimination of the necessity for haste, as a result of the sacral anesthesia. Emphasis should be placed upon the importance of minimizing the loss of blood, for the reason that it is undoubtedly true that, although comparatively few patients die as the direct and immediate result of hemorrhage, there are many fatalities occurring later because of lowered resistance and sepsis, resulting indirectly from the spilling of blood. These remarks refer merely to the control of immediate post-operative hemorrhage, occurring during the first two or three post-operative days. The control of immediate post-prostatectomy hemorrhage would seem to be an almost solved problem. Delayed post-operative hemorrhage, however, occurring after a ten-day or two-week interval, often profuse and massive, and coming on suddenly, in a patient considered to be out of danger, constitutes a grave menace, and may be considered the chief unsolved problem connected with prostatectomy today. At any rate, there is no other complication so serious, so unforeseen, and which we are so wholly unable to prevent. Fortunately, this is a rare complication (approximately 2%), and one which might well pass unnoticed in a small series.

Sacral block anesthesia, the fourth factor in minimizing the mortality rate, unquestionably plays an important role. This opinion is justified because there have been no anesthesia deaths in the series, and no alarming anesthesia reactions. The outstanding feature is that these patients return to their beds in the same condition, with respect to circulation and general appearance as before the operation. Whatever post-operative "shock" may be, this condition is conspicuously absent following the perineal operation, under sacral anesthesia.

Finally it is to be noted with respect to mortality, that there is a certain definite and inevitable death rate during the prostatic hypertrophy age, occurring from various causes, with or without operation. The so-called American Experience Tables of Mortality, which are used as a legal standard for actuarial computations by life insurance companies, show that out of a total of 1,000 individuals, living at the age of 70, slightly more than 6% may be expected to die from "natural causes" (without operation) before reaching the age of 71. Since the average prostatectomy patient is under observation over a period of almost two months, it is logical to assume that a one per cent mortality rate may therefore be accounted for by "natural causes" wholly unrelated to the prostatectomy. Although this would seem to be rather a theoretical consideration, this observation is borne out by facts, since three (and perhaps four) of the nine deaths included in this series merely happened to occur during convalescence, and were in no way associated with the operation. These figures tend further to emphasize the statement that the mortality rate, due to the operative procedure itself, may be reduced to almost nil.

It may be stated that the problems of (1) renal insufficiency, (2) anesthesia, and (3) immediate post-operative hemorrhage may be considered to be practically solved by (1) preliminary drainage, (2) sacral anesthesia, and (3) hemorrhage controlling devices, respectively. One is therefore justified in the opinion that the chief hazard of prostatectomy (or at least, the only wholly uncontrolled hazard) is that due to delayed massive hemorrhage, occurring unexpectedly as late as the end of the second post-operative week, in a patient in apparently excellent condition. This complication is as unforeseen and unpreventable as pulmonary embolus. There were ten such cases in this series. Although there was no death in the series due directly to hemorrhage, (either immediate or late), delayed hemorrhage of this kind, with resulting lowered resistance, was considered to have been an important contributing factor in two of the three deaths due to late general sepsis.

LATE FUNCTIONAL RESULTS

With respect to late functional results following prostatectomy, it is to be recognized primarily that perfection, or even approximate perfection, is out of the question. Prostatectomy, always performed at a time of life when the human machine has passed its prime, and often in advanced old age, has to deal with a body which has developed many defects, some of which are due directly to months or years of urinary obstruction and infection, and some of which occur as the inevitable consequence of old age. Under these circumstances, complete restoration to normal, with complete disappearance of symptoms, so that the patient is willing to consider himself "well", is impossible in many instances, even though the purpose of the operation, (relief of urinary obstruction) has been accomplished.

The only method of obtaining fairly accurate information as to late functional results (after an interval of several months) is by the use of questionnaire blanks. Those of you who have attempted to obtain information by this method, recognize this as a tedious and rather unsatisfactory process, beset with difficulties and inaccuracies at best. The beginning of the series here presented dates back to the beginning of the routine use of sacral block anesthesia, in 1924. Since the first group of questionnaire blanks was not sent out until 1928, information concerning many of the early cases is lacking. The total number from whom it has been possible to obtain direct information is 253, as outlined in Table II. The remainder, not included, is made up of those who have subsequently died, those with address unknown, and those failing to reply. The percentage indicated in Table II, however, based upon 253 available consecutive replies, may certainly be considered to represent an accurate cross section of the entire series. Later in the series the percentage of accurate information has been much higher. In fact, in the last 100 cases, the questionnaire blank failed to return in four cases only. These four have been omitted from the series, although each is known to have left the hospital with a satisfactory functional result.

Each questionnaire blank included merely the following simple, direct questions:

1. Is the wound entirely healed?
2. Can you control the urine?
3. Do you pass urine too often?
4. How many times do you get up at night to urinate?
5. Does the urine pass without difficulty?
6. As far as the operation is concerned, do you consider yourself (1) well, or (2) improved, or (3) unimproved?

The last question, "Are you well, improved, or unimproved?" was considered to be by far the most important, since the patient's reply to this represents his own unbiased opinion as to what was accomplished by the operation. It need not be pointed out before this audience that replies to this important question, received from a large number of old men in various walks of life, many of them more or less ignorant or childish, and some of them mentally incompetent, would naturally tend to be statistically unfavorable. Many of these replies are, therefore, based upon whim and fancy, rather than upon a careful consideration of whether or not the mechanical urinary obstruction was relieved. This opinion is confirmed by an analysis of the questionnaire blanks, showing that many of these old men, in excellent condition as far as wound healing, urinary control and absence of residual are concerned, classify themselves as "improved", rather than "well", merely on account of varying degrees of persistent urinary frequency, secondary to deep-seated and irremediable urinary tract infection. Others place themselves in the improved group on account of swollen ankles, shortness of breath, or indigestion, or other wholly unrelated causes. In spite of these natural unfavorable tendencies, however, 82% (207 of the 253) have classified themselves as well; 17% as improved, and 1% as unimproved.

There is also difficulty in obtaining accurate and fair information upon the subject of urinary control. The possibility of injury to the external sphincter during the perineal operation is an acknowledged hazard which is not to be minimized. There is no case in the series of complete urinary incontinence. There are two patients, however, who unquestionably have sufficient difficulty with urinary control to be the cause of very real inconvenience, although each has the power of sphincter action, as evidenced by the ability to start and stop the urinary stream several times while voiding. Table II also includes a group of five cases of slight or doubtful incontinence giving such answers to the question concerning urinary control as "not always", or "most of the time", or "fairly well, but not perfectly". It is difficult to evaluate or interpret such replies fairly. In addition, there were three patients giving somewhat similar replies who were excluded from this group because subsequent personal conversation with the patient or his physician satisfactorily demonstrated that the condition was one of occasional urinary urgency due to infection, rather than due to true sphincter weakness. Possibly, this figure could be further minimized if there were the opportunity for personal conversation with the other five. It is likely that the cases of true sphincter weakness cited above, occurred as the result of faulty operative technique. It is true, however, that the occasional case of sphincter weakness is observed after the suprapubic operation, and hence may be considered to be dependent upon individual anatomical variation in the strength of the musculature making up the external sphincter.

TABLE II

PERINEAL PROSTATECTOMY UNDER SACRAL BLOCK ANESTHESIA: LATE FUNCTIONAL RESULTS

Total Questionnaire Blanks Returned	253	
Patient's Own Opinion—		
Well	207	82%
Improved	42	17%
Unimproved	4	1%
Incontinence—		
Complete	0	
Moderate but definite	2	
Slight or doubtful	5	
Nocturia (based upon 100 cases only)—		
Not at all or once	43	43%
Once or twice	21	21%
Two or three times	25	25%
Four or more	11	11%
Urinary Fistula—		
Complete	0	
Slight, but requiring closure	7	
Urethro-Rectal Fistula—		
Immediate	0	
Late	2	

The tendency toward the persistence of varying degrees of urinary frequency, in a large percentage of these patients, even after the urinary obstruction has been relieved, would seem to be rather disappointing, as well as surprising. The figures in Table II, having to do with the subject of post-operative urinary frequency, are based upon one hundred consecutive replies only, yet these figures should be fairly representative. Only 43% of these patients are so entirely normal as to find themselves getting up not at all, or only once, each night; while 21% report once or twice; and 25% two or three times. In spite of imperfection in this respect, however, 83% of these patients voluntarily classify themselves as "well".

There has been no case of complete permanent perineal urinary fistula. Seven patients have had a slight persistent fistula, with leakage of a few drops of urine with each urination. In six of these, this condition has been sufficiently annoying to justify secondary excision of the fistulous tract. All of these closed following this procedure.

Urethro-rectal fistula, while always a possibility without due care in prevention, is so rare a complication as not to require serious consideration. In one case this complication developed on the tenth post-operative day, although there had been no knowledge of rectal injury at operation; in another, at the end of the fifth post-operative week, after the patient had returned home. This latter patient had had persistent fever, suggesting a deep perineal abscess as the etiological factor. In two additional cases of known rectal injury at operation, urethro-rectal fistula was prevented by a method of suprapubic aspiration to be published later. With proper operative technique, and with the use of methods of prevention, this complication is, therefore, exceedingly rare. Furthermore, existing urethro-rectal fistula, while a very serious and distressing condition, is by no means hopeless, since the radical "exaggerated Whitehead" operation, described by Young and Stone offers an excellent method of cure.

SELECTION OF CASES

The question next arises as to how great a factor in minimizing the mortality rate the selection of cases has been, and what percentage of these patients, in frank need of relief from prostatic obstruction, have been denied the operation by reason of physical disability. There are those who might inquire as to how many patients have been sentenced to suffering for the sake of sta-

TABLE III

CLASSIFICATION OF PATIENTS WITH PROSTATIC OBSTRUCTION

Total number of urological consultations during 21 months between June, 1929, and March, 1931	1336	
Total number of patients with prostatic obstruction seen during this same period	200	
Carcinoma	18	9%
Prostatectomy performed	118	59%
Symptoms insufficient to justify prostatectomy	19	9.5%
Operation refused or postponed by patient	32	16%
Died during retention catheter drainage	1	0.5%
Died following suprapubic drainage	3	1.5%
Sent home with suprapubic drainage tube—decision pending	6	3%
Prostatectomy considered hopeless on account of patient's condition	3	1.5%
	200	

tistics. In an effort to obtain accurate data upon this subject, the records of the last consecutive 200 patients, who have come in for consultation *on account of prostatic obstruction*, have been reviewed. These 200 prostatic patients were seen during the 21 months included between June 20, 1929, and March 24, 1931. These patients have been divided into groups as shown in Table III.

It is interesting to note that of 200 consecutive patients presenting themselves on account of varying degrees of prostatic obstruction, 41% (for varying reasons as outlined in Table III) never came to prostatectomy. None of these, however, is of particular interest excepting those dying during the drainage period, and those considered inoperable. One died in gradually increasing uremia, after five weeks of retention catheter drainage. Of the three deaths following suprapubic drainage, one (on the fourth post-operative day) was considered to be due to cerebral hemorrhage or cardiac failure, and another (on the 31st post-operative day) was proved to be due to pulmonary embolus. The third death in this class occurred at the end of six weeks. This patient had a carcinoma of the bladder, in addition to the prostatic hypertrophy.

The opinion has been submitted that deaths following suprapubic drainage should be included in figuring prostatectomy mortality. This is perhaps a debatable question, but would seem to be hardly fair. Under such an assumption, no value whatever is placed upon the judgment and discretion of the surgeon. In each case, suprapubic drainage was carried out because relief from suffering was imperative. If it is true that the three deaths following suprapubic drainage should be included in the prostatectomy mortality, then it is likewise true and just as logical that the patient dying during retention catheter drainage should also be included. To carry this argument to its absurd conclusion, it might be stated that every prostatic patient seen in consultation, and subsequently dying, with or without operation, should be included in figuring prostatectomy mortality.

There were only three patients (1.5%) in such physical condition that prostatectomy was definitely decided to be hopeless and out of the question. Two of these (Nos. 4599 and 5281) were weak, frail old men in the eighties, with extremely poor functional tests. The decision in these two cases was based more upon general appearance and condition of circulation, rather than upon age and functional tests. The third (No. 5302) was a man of 60 in the advanced stages of cardiac decompensation. This patient died after six weeks of interval catheterization.

The last group for consideration is made up of those patients (numbering six), sent home with suprapubic drainage tubes, with the decision pending, as to the advisability and date of prostatectomy. One of these (No. 5158) chose to continue indefinitely with the drainage tube and died after an interval of more than one year. As nearly as may be determined by recent communication, each of the other five (Nos. 1619, 5268, 5270, 5575 and 5616) is in good condition and in shape for prostatectomy when and if he chooses to return.

There is no occasion for referring to, or reciting in detail, the case histories of the large number of patients in this series upon whom prostatectomy was successfully performed, in spite of a wide veriety of serious physical defects. It is sufficient to state that the prostatectomy list includes many grave risks, and that the minimum number excluded was made up of those in which it would have been obvious folly to proceed.

SACRAL BLOCK ANESTHESIA

In reviewing this series it is also of interest to direct attention to results in sacral block anesthesia as shown in Table IV. Those who are familiar with the literature upon this subject are aware that one of the chief objections to this method of anesthesia has been that many observers have reported a certain small but inevitable percentage of cases in which there was inexplicable failure to obtain anesthesia. My own original series of thirty cases of perineal prostatectomy under sacral block anesthesia(2) included seven cases in which additional inhalation anesthesia was necessary. This represented 23% of failure.

The series here presented consists of 411 consecutive cases of perineal prostatectomy, similarly handled. Each one of these, without exception, received sacral block anesthesia, consisting of a caudal injection, and injection of the first, second and third posterior sacral foramina, as outlined above. As indicated in Table IV, the percentage of anesthesia failure, which was very high early in the series (20% in first 25 cases), has shown a gradual decrease during the first hundred cases, and has now come to be nil. The total number of failures in the first 100 cases was twelve, of which nine occurred during the first fifty. Since the first 100 cases there has been one failure only (No. 149), and, following this, there have been 262 consecutive cases without a failure, in a series which is as yet uninterrupted.

TABLE IV

SACRAL BLOCK ANESTHESIA FAILURES IN PERINEAL PROSTATECTOMY

Analysis of first 100 cases.	Number Failures	Pecentage Failure
1st 25 cases	5	20%
2nd 25 cases	4	16%
3rd 25 cases	2	8%
4th 25 cases	1	4%
Total 1st 100 cases	12	12%
Analysis total series of 411 cases.		
1st 100 cases	12	12%
2nd 100 cases	1	1%
3rd 100 cases	0	0
4th 100 cases	0	0
Last 11 cases	0	0
Total 411 cases	13	3.4%

Total number of failures last 311 cases............1 (0.3%)
Total number of failures last 262 cases............0
Time necessary for complete block
Average ....12½ min.
Maximum ....30 min.
Minimum ....4½ min.
(Note—"Identical" technique in all cases).

As here employed, the term "sacral anesthesia failure" means that supplementary inhalation anesthesia was necessary. Every case where nitrous oxide or ether was employed has been counted, whether used throughout the operation or whether "only a few whiffs" were given, and whether the general anesthesia was necessary because of actual pain or merely for "psychic" reasons. In fact, in no case in which the anesthesia was classed as successful was there an ether mask or a nitrous oxide apparatus in the operating room during the operation. There is, therefore, no occasion for classifying these anesthesias as successful and "fairly successful." Each anesthesia was a complete success or a complete failure, as determined by whether or not the operation was completed without supplementary inhalation anesthesia.

The feature of practical interest is the gradual decrease in the percentage of failure during the first hundred of the series. In all cases, the same operation was performed, and the same position on the table was employed. Also the same amount of the same drug in the same concentration was used, as well as the same type of needles and, as nearly as it was humanly possible to determine, the same technique of injection. That is to say, there has been no deliberate modification of technique. The same anesthetist has performed the injections in all cases. Therefore, since all of these controllable factors have been constant, the only permissable conclusion is that success or failure is wholly dependent upon whether or not the needles have been accurately placed within the caudal canal and the sacral foramina, *and upon no other factor.* There is, therefore, no occasion for further reference to the percentage of inexplicable failure with sacral block anesthesia. If the anesthetist searches, and continues to search, for the foramina until he finds them, and knows that he has found them, the anesthesia will be successful. The percentage of success is, therefore, a matter of practice and perseverence.

SUMMARY

There have been nine deaths in a consecutive series of 411 cases of perineal prostatectomy under sacral block anesthesia. (2.17%).

The chief factors contributing toward maintaining a low mortality rate in prostatectomy are (1) adequate preliminary drainage, (2) the perineal route, (3) detailed attention to hemostasis, and (4) sacral block anesthesia.

The chief uncontrolled and unavoidable hazard of prostatectomy today is massive *delayed* hemorrhage, coming on as late as the end of the second week, and occurring in 2% of cases.

As determined by questionnaire blanks sent out after intervals of several months following prostatectomy, 82% of these patients voluntarily classify themselves as well, 17% improved, and 2% unimproved. By far the chief reason why these patients tend to classify themselves as improved rather than well, is in the persistence of varying degrees of urinary frequency, due to deep-seated and irremediable urinary tract infection.

With respect to the matter of selection of cases, out of a total of 200 consecutive patients presenting themselves with varying degrees of prostatic obstruction, 118 were submitted to prostatectomy, six were sent home with suprapubic drainage tubes, with the decision pending as to the advisability of prostatectomy, while in three instances the patient's condition was considered such as to definitely contraindicate any consideration of prostatectomy.

The technique of sacral block anesthesia (for prostatectomy) may be made sufficiently exact so that the percentage of failure, formerly considered inevitable, may be entirely eliminated. In a series as yet uninterrupted, it has been possible to employ sacral block anesthesia for perineal prostatectomy in 262 consecutive cases without a single anesthesia failure.

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PART II

SPINAL ANESTHESIA*

(Continued from previous number).

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Complications and Sequelae: The reports of bad effects from spinal root block include a whole catalogue of complaints. The fall in blood-pressure, weak pulse, pallor, nausea and vomiting and complaint of inability to get enough air, are frequent, transitory and of little consequence. Headache is the most frequent and troublsome complication of note. It usually begins twenty-four to forty-eight hours post-operative and rarely lasts longer than five days. Cases are reported however that persist, usually with remissions, for weeks. I have had only two severe cases of headache in my entire series. It is notable that in my cases studied in detail there were eight and eight-tenths per cent complaints of headache under block and sixteen per cent under ether. This includes only those who complained while in the hospital. Featherstone(12) however found the same to hold true of late post-operative development. In reply to a questionnaire, forty per cent of those who had had spinal block and replied, complained of late development of headache of some degree. Surprised, he wrote to a similar series of patients who had had ether and found that sixty-eight per cent had developed late headache. I can not recall however having had the severe type of headache after ether that sometimes develops after lumbar puncture or spinal block. The cause of the headache has been attributed to loss of the cerebro-spinal fluid through the puncture wound in the dura, increase of the volume of cerebro spinal fluid, and to leakage of blood into the subarachnoid space. Evans(12) says that if the headache is due to leakage it is almost completely relieved when the head and shoulders are lowered. This type should not have a second tap. The meningetic or irritation type has other meningal symptoms as photophobia and stiff neck. A second tap will probably relieve this. Koster and Weintrob(13) say they found no difference in the incidence whether a small or large needle was used. They nevertheless recommend the small needle. Care in introducing the puncture needle and in keeping the head and shoulders lowered afterward will probably eliminate many of the headaches. In treating the headache one uses aspirin, caffein-sodio-benzoate, pyramidon, codein or morphine. The head is kept low and the room darkened. Visitors should be excluded. If meningismus is present do repeated taps, and institute dehydration therapy as hypertonic saline or glucose intraveneously or retention enemas of about six ounces of fifty per cent MgSO4. Magnesium sulphate, two cc of fifty per cent solution intraveneously, is also recommended(10). I have not had to resort to radical treatment.

Respiratory failure is much discussed but must be very rarely seen. Evans says it is almost impossible to paralyze the cervical nerves with novocain injected below the twelfth dorsal vertebra. Breathing is usually slow and shallow and is probably dependent on the fall in blood pressure. Should alarming symptoms present themselves the patient should if not already in Trendelenberg's position be so placed. If breathing stops entirely artificial respiration by mouth to mouth insufflation with the nostrils and epigastrium compressed should be practiced as advocated by Babcock(14).

Backache is an unusual symptom and usually due to unskillful puncture or relaxation from the anesthetic. It has been my impression that it occurs as frequently after one as another anesthetic. My figures for spinal block and ether are sixteen per cent and four and eight-tenths per cent, respectively. I did, however, have one case of rather severe backache in the upper dorsal region that persisted many days after an anesthesia induced by block through a lumbar puncture.

Disturbances of bladder and rectum are fortunately rare. I do not believe, and published statistics bear me out, that catheterization is required more frequently after spinal block than after inhalation anesthesia. Fecal and urinary incontinence have been reported. The condition usually persists but a short time though permanent impairment has been reported. One of the most amazing complications is abducens paralysis of the external rectus muscle of the eye. This may occur soon after the tap or be delayed ten days or more. It is transient, lasting usually not more than a few days. Babcock had five cases on his service which he thought followed use of contaminated ampules of stovain and tropococain. In the following eighteen years with twenty thousand injections he did not again encounter it. Other ocular complications, as choked disc and drooping of the upper lid have been reported.

Meningitis is rare and probably should never occur. Nine cases have been reported and two resulted fatally. One should scrupuously avoid puncture through an area that shows any signs of infection.

Areas of anesthesia, paresthesia, muscle atrophy, trophic ulcers and sharp pain along the course of a nerve may result from injury to a root or the cord. Such symptoms are rare and usually transient. At least one case has been reported in which there was transient flaccid paralysis of the entire body below the neck. Case(14) in eleven hundred injections had one reported from the service of his colleague, J. M. Nielsen. The patient, a woman of thirty-six years, was operated for perineoplasty. After operation she complained of severe pain in the tip of the coccyx and in the sacral region. This continued for two weeks relieved by heat and opiates. There was a saddle shaped area of total anesthesia, rectal and vesical insensibility, and the patient was involuntary and incontinent. There was hyperesthesia of the first and second sacral areas on the left and all lumbar segments on the right. The pain was increased by raising the trunk, coughing or sneezing. Recovery was slow but complete. The diagnosis was cauda-equina lesion, probably hemorrhagic. For me, however, the difference in the segments involved on the two sides makes the diagnosis problematical. Degenerative myelitis and paralysis of the external popliteal and sciatic nerves have also been reported. These probably result from injury to the roots or cord by the needle. When a nerve is struck by the needle the patient complains of severe pain or cramp in one leg or foot. The position of the needle should be changed before injecting the solution. Puncture of the cord usually causes neither pain nor after effect. Patients with organic cord lesions have frequently tried to prove them the result of spinal anesthesia. Evans thinks that of all the cases reported in the literature, in only two would such a claim be justifiable. If one makes the tap below the second lumbar vertebrae he cannot injure the cord. It is interesting, however, that Jonnesco, who practiced high puncture, as high as the cervical region, had no serious sequelae and no complications in sixty-two hundred cases. A history of what has happened makes it incumbent on the surgeon to make a neurological examination before operation under spinal block with the same regularity and care that he exercises in examining the testicles before a hernorrhaphy.

Psychic disturbances have been reported in a very small percentage of cases. Acute mania may occur as it may occur after inhalation anesthesia. I believe that with careful phychological handling of the patient before and during the anesthetic period such a disturbance will be less frequent with the block than with inhalation.

Pulmonary complications: In a review of the literature one finds little encouragement for the hope that spinal block will reduce post-operative pulmonary complications. No attempt is made here to discuss these complications at length but only to give enough of the fundamentals to allow a survey of the situation. During the past decade authors have emphasized three etiological factors, namely, emboli, pneumonitis and lobular or massive atelectasis. During recent years the latter group has chiefly occupied the stage. It seems, indeed, probable that a varying proportion of post-operative lung conditions is due to each of these. Muller and associates found elevation of the domes of the diaphragm after upper abdominal operations. The average elevation they found to be about four and eight-tenths cm. The maximum excursion after operation was about a third of the pre-operative range. The diameter of the chest was greater after operation, the increase amounting to two and eight-tenths cms. The vital capacity on the day following operation was only a third of what it was pre-operatively. These changes occur regardless of the anesthetic. They, therefore, think that bronchial obstruction, heretofore so much stressed, is not the primary cause of atelectasis but that it is due to hypo-ventilation and compression of the lower lobes. They recommend oxygen and carbon-dioxide inhalations, semi-Fowler position and early movement. I concur in their recommendations and believe they can be much earlier and more expeditiously carried out on a conscious and co-operative patient. Certainly one can get little cooperation from an ether patient during the first twelve hours. If, however, one prefers to put his faith in the obstruction theory, or if one believes aspiration pneumonitis is the cause of most pulmonary complications it is difficult to escape the conviction that the quantities of mucus secreted during an ether anesthesia are harmless. Such reasoning may seem unscientific but one has only to scan the literature to observe that figures most frequently show the trend of the author's thought. Thus McGrath(18) of the Mayo Clinic reported forty-nine hundred and fifty-seven ether anesthetics with no death attributable to the anesthetic. Yet, from the same clinic, though not covering exactly the same period of time, Lundy(19) reported twenty-one deaths in six hundred cases in six of which he believed ether to be at least partially responsible. Another series is reported from the

Massachusetts General Hospital by McKittrick and associates. The opening statement is that "In order that there might be a minimum of discrimination in the selection of patients, spinal anesthesia was made routine for all abdominal operations on the East Surgical Service. There were in addition a number of patients in the younger age groups in which spinal anesthesia seemed desirable." After thus outlining the absence of discrimination in the selection of patients they recount the complications and state that "It was a great disappointment to find complications of the respiratory system accounting for forty per cent of those occuring in this series." They then state that "It is true that in some instances this form of anesthesia was selected because of the presence of some pre-existing respiratory infection." Thus it goes, and numerous series of cases can be cited as favorable or unfavorable to any form of anesthesia. Whichever theory or theories are correct relative to the cause of pulmonary complications I have proven to my satisfaction that the administration of oxygen and carbon-dioxide for two or three minute periods at ten or fifteen minute intervals during the hour of anesthetic and then one such administration three hours later will lessen the pulmonary complications as it has in my last hundred cases at least eighty per cent. There is no mention made of the use of oxygen or carbon-dioxide in the Massachusetts General Hospital series.

By the use of this agent one also relieves the disagreeable nausea which is usually transitory but disagreeable nevertheless, by stimulating respiration, supplying the cells with more oxygen and thus eliminating or at least lessening anoxemia. Koster and Weintrob, from January 27, 1929, to September 23, 1929, operated on one thousand and ten patients with conditions of enough importance to require spinal. These included all their surgery from head to foot. They had three cases of pneumonia, eleven of bronchitis, four of dry pleurisy and one of massive collapse. Compared with this they cite the report of Cutler and Hunter in which fifty-five pulmonary complications with eleven deaths was noted in fifteen hundred and sixty-two operations.

I feel that a comparison of even a very large series of cases from a city such as Lincoln with a similar series in one of our large eastern cities is of no value for we do not have the pulmonary diseases, either post-operative or otherwise that they have in such cities. Furthermore, our patients come to use in better condition than those who present themselves at a large city hospital. Thus in my small series the total mortality was four and eight-tenths per cent with spinal and three per cent in the ether group while the series of four hundred fifteen of the Massachusetts General Hospital just quoted presented a mortality of eleven and eight-tenths per cent.

The records in my cases were made with no intent of proving or disapproving anything so I feel that they are fair so far as may be. It came as a surprise to me to find that the number of patients coughing after spinal block was just twice as many as after ether. This I think proves nothing but that during the past year I have gradually come to the conclusion that spinal block is the safest anesthesia and I have more and more used it on my bad risk patients. I shall still prefer it and doubly so if a respiratory complication seems probable.

Deaths: That I have had no deaths in my series attributable to spinal anesthesia is saying nothing. An anesthesia, to be usuable, must offer a very low mortality. Rygh and Bessesen(17) collected from the literature two hundred fifteen thousand, eight hundred ninety-five cases operated under spinal anesthesia. There were seventy-five deaths, or one to three thousand, three hundred and forty-five. In a restricted group of forty-four thousand, two hundred and forty-one of these cases in which there was a satisfactory record there were twenty-nine deaths. In reviewing these they found that only four of the deaths were due to the anesthesia. This gives a mortality of one in eleven thousand and sixty. But even yet one must remember that in many of these cases spinal block was chosen because of the critical condition of the patient or because some other anesthetic was contra-indicated. In reviewing in the literature the deaths attributed to spinal block one finds that many of the patients were moribund when they entered the operating room and frequently operation would not have been undertaken but for the great faith of the operator in the harmlessness of the anesthesia. Other patients were operated while in shock. In a few instances death may have resulted from the early and rapid change from Trendelenberg's position to Fowler's. One patient probably died from the shock of lumbar puncture or unknown cause. He was a strong, healthy man about to be circumcised and died following lumbar puncture, before the injection had been made. In many deaths reported as anesthetic deaths after reading the records one is in doubt as to the cause. Even where autopsy is performed frequently little or no light is shed.

Consecutive operations with Ether and Spinal Block used for comparison. There was no selection of cases except in bad risk cases where block was preferred. Only major procedures are listed.

Operations	Number	
	Ether	Block
1. Appendectomy	34	36
2. Perineorrhaphy Uterine suspension	3	1
3. Nephrectomy	2	3
4. Salpingectomy	5	3
5. Appendectomy Cholecystectomy	9	14
6. Hysterectomy—		
total	3	3
sub-total	2	5
7. Appendectomy Trachelorrhaphy Perineorrhaphy	3	2
8. Appendectomy Uterine suspension Trachelorrhaphy Perineorrhaphy	2	2
9. Salpingectomy Pelvic abscess	1	2
10. Inguinal hernia—		
uni-lateral	2	1
bi-lateral	2	3
11. Appendectomy Castration	—	1
12. Bilateral orchidopexy	—	1
13. Intestinal obstruction	2	2
14. Osteomyelitis	1	2
15. Bone graft	—	1
16. Prostatectomy	4	4
17. Myomectomy	2	1
18. Colostomy Gastrostomy	—	1
19. Hydrocele	2	1
20. Intestinal resection	2	2
21. Reduction of fracture	—	1
22. Amputation of lower extremities	1	1
23. Bunion and tendon lengthening	—	1
24. Cholecystectomy Uterine suspension	—	1
25. Cholecystectomy	8	4
26. Appendectomy Hysterectomy Perineorrhaphy	2	2
27. Hysterectomy Colporrhaphy Perineorrhaphy Cystocele	3	3
28. Appendectomy Uterine suspension Salpingectomy	2	1
29. Appendectomy Jejunostomy	4	3
30. Curettage	3	3
31. Umbilical hernia	—	2
32. Appendectomy Oophorectomy	2	2
33. Gastro-enterostomy	2	3
34. Appendectomy Salpinjectomy	4	3
35. Resection of colon	2	1
36. Nephrectomy Cholecystectomy	—	1
37. Ischio rectal fistula	3	—
38. Bunion	1	—
39. Hemorrhoidectomy	2	—

Comparison of 125 cases under spinal block with 125 under ether.

	Number	Cases
	Ether	Block
1. Profuse perspiration	40	23
2. Headache	20	11
3. Backache	20	6
4. Hiccough	12	4
5. Cough	5	10
6. Pain in chest	2	3
7. Post operative morphin (grs.)	1.02	1.09
8. Pulse rate—		
Before operation	85.2	90.8
After operation	96.6	79.
9. Average days in hospital	12.8	13.2
10. Average duration of operation (minutes)	44.3	42.3
11. Number of patierts who vomited once or more	98.	59.

There were no serious respiratory complications in either series. The block was sufficient for the entire operation in 119 of the 125 cases.

There were no anesthetic deaths. There were six deaths in the block series one from resection of the colon, two from post-perforative peritonitis, one from paralytic ileus and two following bowel resection for neglected obstruction. There were three deaths in the ether series, two from post-perforative peritonitis and one from resection of the colon for advanced carcinoma.

Of those who have used spinal anesthesia in Lincoln, Dr. McKinnon is the one who has doubtless used it the most and over the longest period of years and it was through his friendly counsel and advice that I became converted to its use and convinced of its virtues.

I remember my first case was a woman past middle life with a condition of the uterus suspicious of malignancy with indications for a total hysterectomy. She had a healthy left lung and one lobe of her right, the balance having been destroyed when she was young by a lung abscess. I felt that here was a case where I was justified in wandering from the beaten path and leaping into the unknown. The general results in this case were so satisfactory that I became determined to use it more and more, to study it carefully and to attempt to perfect a refined technique.

As in every other branch of medicine or surgery these refinements can only come after diligent study and careful analysis and the exercise of every effort together with application of a good bit of common sense.

So, in conclusion, I would commend to every surgeon who is not using spinal anesthesia the careful study of this branch of medicine, discovered many years ago, but which is only today, generally speaking, becoming practical. Do not wait for bad cases to use it on but perfect your technique on the usual cases. Use it routinely until its untoward manifestations cease to cause anxiety through familiarity with them and you will become an enthusiastic user of the method.

We are indebted to Corning, Sicard, Bier and the other pioneers who brought this method to light, as well as to Babcock, Deaver and the dozens of others who have contributed to our present knowledge, and especially am I grateful to the men in our state who have contributed to this special branch of surgery, Dr. J. E. Summers of Omaha and Dr. A. I. McKinnon of Lincoln.

Since preparing this paper one report has appeared in the literature which on a part of this subject has heretofore received but little attention. I refer to the article by Davis(20) and Associates on the effects of novocain on the cord and its membranes. They state their findings as: "(1) A varying degree of inflammatory reaction in the leptomeninges. (2) Passive changes in the ganglion cells of the gray matter of the cord similar to those seen in retrograde or so-called Wallerian degeneration. (3) Swelling and fragmentation of the axis cylinders. (4) Signs of degenerative changes in the fiber tracts of the cord." The first change went on to healing by formation of scar tissue while the last three were only temporary. Their experiments were conducted on dogs and were well controlled. It is, however, only fair to say that their conclusions are at variance with those of Pitkin(21).

(Complete Bibliography will be found in Reprints).

RECONSTRUCTION PROCEDURES IN TRAUMATIC LESIONS OF BONE AND JOINT WHERE CONSERVATIVE METHODS FAIL*

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Failure of conservative methods in the successful handling of injuries to bones and joints may be due to local factors or general systemic lesions. The former are by far the more important.

Hey-Groves divides the causative factors for delayed and non-union into mechanical, vascular, and disease processes. The local difficulties may be either extrinsic or intrinsic.

Mechanical factors in the order of importance are incomplete reduction, inadequate fixation, interposition of soft tissue, bone defect, small bone fragments between fracture ends, and foreign bodies in the region of the fracture.

Vascular disturbances are particularly concerned with the blood supply to the fragments, either being lessened by the laceration of a nutrient vessel, or the circulation impaired by the compact tissue surrounding the fracture, the lower third of the leg is an example of this latter condition, and undoubtedly acccounts in part for the frequency of delayed or non-union in the lower third of the tibial shaft. The high incidence of non-union in the surgical neck of the femur, may be charged to impaired blood supply as well as the intracapsular location of the fracture which permits continuous emersion of the fracture surfaces in synovial fluid. This also is true in fractures of the carpal scaphoid, where fibrous union is too frequently encountered. In both cases, however, obvious extrinsic mechanical conditions play an important part. The end result of vascular complications is absorption of bone, "pencilling" of shaft fragments, sclerosis of bone ends, and closure of the medullary canal. This leads to the disabling condition of psneudo-arthrosis.

An ossifying hematoma or excessive callus formation following fracture or dislocation about a joint may lead to complete or partial ankylosis, necessitating extensive reconstruction. Here again vascular elements come into play, but with overproduction.

Infection, whether as a part of a compound fracture or as a complication of an operative attack, plays an important part in the production of delayed or non-union. Here conservatism is necessary as far as reconstruction goes, although where mal-position is present, often it is desirable to correct this and maintain reduction by some internal fixation, but leaving the wound wide open, and removing the fixation as soon as it is safe. Bone grafts, of course, are out of the question until the wound has been closed at least six months, and even then latent infection is occasionally encountered.

Systemic disease plays a minor role in delaying bone repair, although various lesions, affecting the osseous system often lead to pathological fractures with little or no attempt at repair. In these conditions, bone grafting is, as a rule, not indicated, due to the unfavorable prognosis and unsuccessful take of the graft. In benign bone cysts, massive substitution of new bone may be necessary to bridge the defect, and here repair is usually successful. (Fig. III B).

The operative indications in the majority of cases, depends on the x-ray findings. Visualization of the bone pathology by films of good bone detail, combined with judgment based on experience, should determine the proper procedure.

Not infrequently failure of union has occurred as a result of inadequate external fixation. In questionable cases, where the fragments are in good apposition, and there is little or no sclerosis or tendency to "pencilling" of the ends, conservatism should be the rule long enough to determine ability to unite, if given opportunity.

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*Clinical material selected from the Orthopedic Services of Drs. Lord, Schrock, & Johnson and presented at the meeting of Nebraska Medical Association, May, 1931.

In the early cases of incomplete reduction, open operation with or without internal fixation is adequate, although in locations such as the lower third of the tibia, neck of femur, and mid-third of humerus, it is desirable to substitute new bone whenever exposure is made.

TYPES OF OPERATIVE PROCEDURES

- Fresh Fractures and Mal-Union
  - Skeletal Traction
    - Ice Tongs
    - Heel Pin
    - Steinmann Pin
    - Piano Wire
  - Open Reduction
    - Without Internal Fixation
    - Removal of Blocking Fragments
    - With Internal Fixation
      - Temporary
        - Nails
        - Drills
        - Pins
      - Absorbable
        - Firm
          - Beef Bone
            - Pegs
            - Screws
            - Plates
        - Flexible
          - Fascia Lata Tendon
          - Catgut
          - Kangaroo Tendon
      - Inaccessible Fixation
        - Lane Plates
        - Wire
        - Parham Bands
- Non-Union Types of Grafts
  - Autogenous
    - On-Lay
    - In-Lay
    - Sliding
    - Osteo-Periosteal
    - Massive Substitution
    - Intra-Medullary
  - Foreign Material
    - Ivory
      - Peg
      - Plate
      - Screw
    - Beef Bone

Figure I.
Outline ennumerating procedures used in treatment of fresh fractures and non-unions.

In the patella, the encircling suture of kangaroo tendon or twisted phosphor-bronze wire, combined with good repair of the tears in the lateral aponeurosis maintains close apposition, thus insuring early union. The beef bone screw is used frequently by us in the repair of a separated olecranon process and also has a place in the T fractures involving knee or elbow. (Fig. II).

Case Report, E. M., age 40 years.

This young lady sustained a fracture of the olecranon on February 10, 1931, which, on first reduction, was satisfactory, but subsequently the fragments separated. Fifteen days after injury, an open reduction was performed and fixation was affected by a beef bone screw. As is usual in fractures of the olecra-

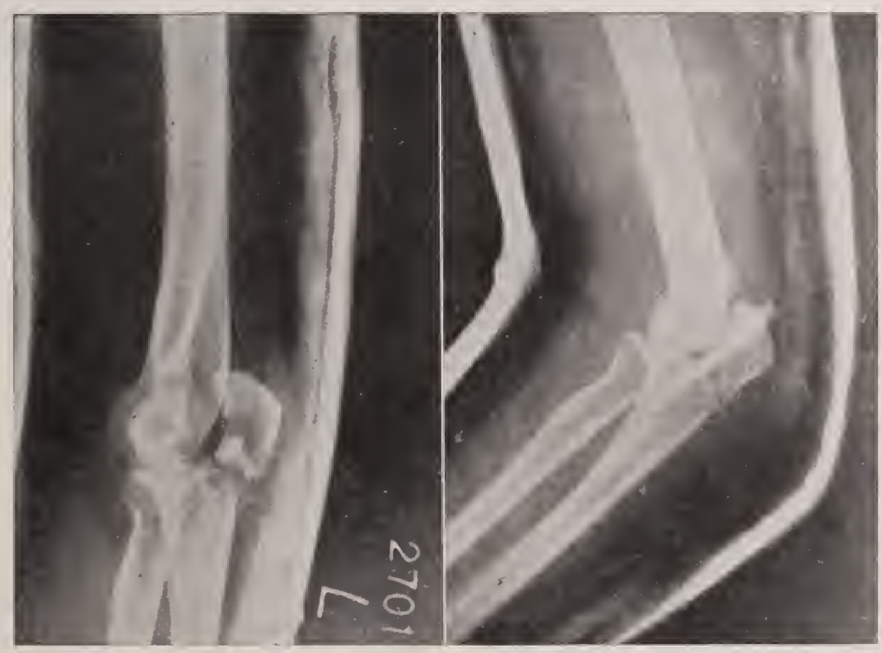

Figure II.
X-rays of case E. M. showing repair of fractured olecranon by beef bone screw.

non, return of motion was slow. Five months later, extension was complete, flexion was possible to slightly less than right angles, while rotations were complete. X-ray examination revealed good bony union, with the screw almost absorbed.

Often combined flexible fixation and osteoperiosteal material is necessary in the repair of lesions about joints. Fascia lata bands are most suitable to supplant lacerated supporting structures such as the coraco-clavicular ligament in dislocation of the clavicle (acromio-clavicular separation). The distal end of the clavicle is freshened and replaced in its bed at the base of the acromion, and an osteo-periosteal "wafer" chiselled from the latter is placed about the articulation to afford fusion. The clavicle is then held down in its position by looping the fascia lata strip around the base of the coracoid process, and up over the shaft of the clavicle.

Case Report, A. P., age 60 years.

Six weeks before coming to our office, the patient noted gradual increasing difficulty in his right shoulder. There was no history of definite trauma, and he continued to work, although he noted a prominence at the point of the shoulder, which was tender. Examination revealed a typical separation of the acromio-clavicular articulation, with complete upward dislocation of the clavicle.

As the patient was a rugged man, we felt a reconstruction procedure was indicated in spite of his sixty years. This was performed by the technique described above, and in eight weeks, all immobilizing apparatus was removed, and he was doing moderately heavy work. The end result, as determined eight months after operation, was practically 100%.

Combined plastics are also desirable in recurrent dislocation of the shoulder. From the standpoint of mechanics, it is evident that a bone wedge driven into the neck of the glenoid to elevate the antero-inferior border of the fossa combined with a capsulorrphy, insures a better result than simply ligamentous and muscular stabilization.

Case Report, L. S., age 16 years.

A girl of 16 years first came to us in June of 1929, on account of a recurring dislocation of the left shoulder, which had been troublesome for three years. The onset of symptoms dated from a traumatic dislocation which, as so often is the case, was simply immobilized in a sling for a few days, following which active use was permitted. This obviously did not give the rent in the capsule an opportunity to heal. She was able to dislocate the head of the humerus into the sub-coracoid position by voluntary muscle contraction, and as a result, relaxation increased.

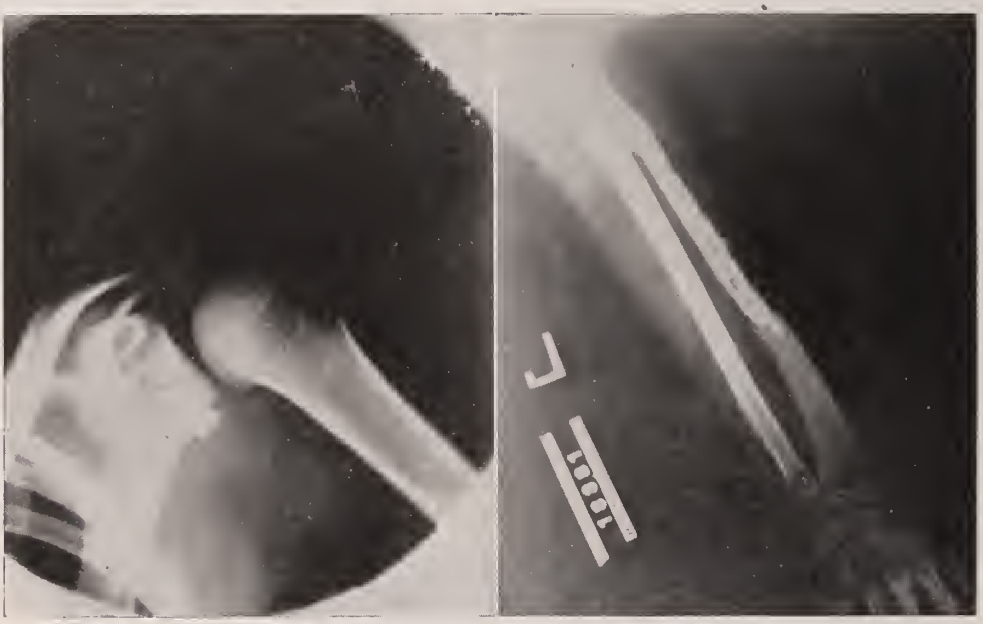
A B

Figure III.

A. Bone wedge elevating antero-inferior angle glenoid in recurrent dislocation of shoulder.—Case L. S.

B. Massive substitution of fibula in five inch defect of radius. Perfect functional result.

We first attempted restriction of abduction and extension by a restraining harness, but this accomplished nothing. Six months later, an arthrotomy was performed, the glenoid elevated by a bone wedge, and the capsule reefed. (Fig. III A.) She was immobilized in 25 degrees abduction, and forward flexion for eight weeks, following which motions were slowly increased.

She was last examined in August, 1931, two years after operation, and motions were complete, with no tendency to redislocation.

The qualifications of a bone graft are varied, depending on location and defects encountered. We have found the on-lay graft successful in non-unions of the shaft, while the bone peg is used in the neck of the femur. Off-set on-lays may be used where a minor defect is to be bridged, but for massive substitution, the shaft of fibula meets the requirements best. (Fig. III B). (An individual suffers no disability by the complete excision of six inches of the mid-third of the fibula.)

The case report which follows, describes our routine method of using the on-lay graft, and the x-ray shows the union obtained.

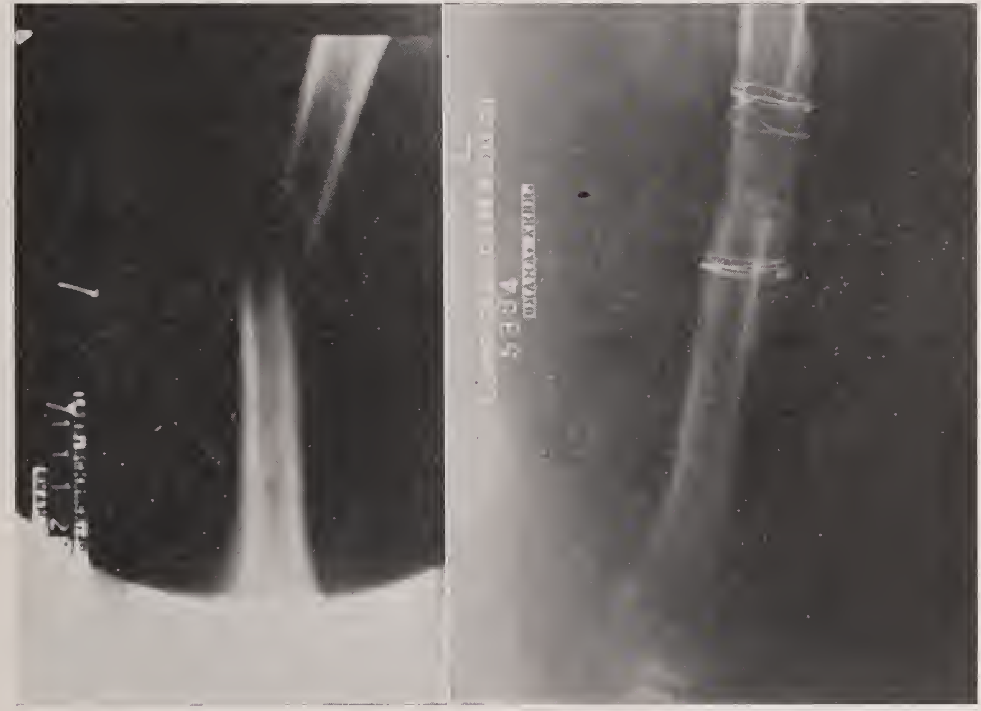

Figure IV.
X-rays of case A. W. with non-union of humerus firmly united by onlay tibial graft.

Case Report, A. W., farmer, age 45 years.

Left arm caught in belt of threshing machine. Severe twisting injury with fracture of shaft of humerus at its mid-third, and lower left radius. Seen in consultation with Dr. Smith of Albion shortly after injury, and satisfactory reduction obtained.

After five months of adequate immobilization in a shoulder spica with end on apposition, there was no evidence of union. At this time there was beginning sclerosis of the fragment ends, and tendency to tapering of the lower fragment. (Fig. IV).

An on-lay bone graft operation was performed December 26, 1930, at which time it was found that a fibrous band extended between the bone ends, completely blocking callus formation. In addition, there was a partial tear of the biceps muscle in this region with extensive scar formation.

After freshening up the fragment ends, and opening the medullary canal, a five inch tibial graft was lashed to the flattened surface of the humerus by two fine twisted phosphor-bronze wires, and two kangaroo tendons. Resection of the scar tissue and repair of the muscle laceration constituted the final step. External fixation was very secure by the use of plaster molded arm splints held in position with circular plaster, including the trunk. His post-operative course was satisfactory, with firm bony union six months later, and surprisingly good motion in the elbow, but limited rotation of the forearm. At that time, he was working actively as a farmer.

His maximum improvement was not reached until one year after operation, and the permanent disability at this time is very slight, being manifested by slight limitation of complete extension of the elbow, and inability to completely suppinate the forearm.

Comminuted fractures about joints require removal of blocking displaced fragments if replacement is difficult or unnecessary. This lessens new bone formation, and leaves the joint clear. The head of radius and condyle fractures of the elbow are the common offenders. In a child, however, it is important to replace these fragments in order to prevent disturbances to epiphyseal centers, producing increased deformity with growth. An ossifying hematoma, not infrequently complicates these elbow injuries, and may produce ankylosis, even though the original trauma was a minor one. Here it is important to refrain from surgery until the ossifying mass becomes "ripe."

CONCLUSION

In final consideration of any bone and joint problem coming under this scope, it is obvious that our indications must depend on the age of the patient, the type of fracture and the x-ray findings. Various methods may be used, and we have simply mentioned those which have given us the desired results, but know that other procedures are equally as good or better in the hands of others.

ARTIFICIAL AND PSEUDO-VOICE FOLLOWING COMPLETE LARYNGECTOMY

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The presence of carcinoma wherever situated has an appalling significance to the average layman and often to the physician.

The origin of cancer is still an unsolved problem although in recent years experimental research, notably the work of Rowe. Borrel, Murphy, Gye, and Bernard, has thrown some light on the question as to whether or not there is an external agent concerned in its production. Ballance(1) has recently summarized the present state of knowledge in the following words: "The efficient cause lies beyond the irritation or injury which are but the partial causes of the disease. The injury prepares a nutrient soil favorable for the growth of the effective agent of the malignant disease."

Predisposing causes: In the larynx, heredity, chronic irritation, abuse of the voice, excessive use of alcohol and tobacco, and syphilis have all been arraigned as predisposing causes without any definite proof. Chevalier Jackson(2) attaches great importance to vocal abuse. He states that out of 582 cases of proved cancer of the larynx, in his experience, there has been undoubted vocal abuse in 376 (64.6%) cases. Chevalier Jackson regards abuse of the voice as one of the most common causes of chronic laryngitis, keratasis, papillomas, and granulomas. In twelve cases there was a syphilitic lesion preceding the cancerous lesion.

Forty years ago Felix Semon (3) in his Collective Investigation of 10,747 cases of which forty-five showed a malignant transformation. proved that the repeated removal of a benign growth had not been demonstrated to have caused cancer. In 2,531 cases in which there was no operation, malignant transformation occurred twelve times, and in 8,216 cases which underwent operation it occurred thirty-three times: once in 211 and 249 cases, respectively. This elaborated research shows that there is no proof that benign growths have any special liability to undergo malignant degeneration or that this occurs particularly after intralaryngeal operations. These conclusions of Semons have called forth controversies but have never been disproved.

Sex: Intrinsic cancer of larynx is about nine or ten times more frequent in males than in females. From statistics compiled by Logan Turner(4) there were 13 males and 83 females with carcinoma in the post cricoid region. This accounts for the statement sometimes made that extrinsic carcinoma is more frequent in females.

Age: Age has a definite influence on the incidence of the disease. Intrinsic carcinoma is rare below the age of 40 and most commonly occurs between 50 and 60, though St. Clair Thomson(5) in 70 cases had two cases in males age 23 and 28. McBride(6) records malignant growth in post cricoid region of a girl age 24. Herbert Tilly of a girl aged 22. F. A. Figi and Gordon New(7) reported two cases of intrinsic growth of a youth 15 and of a woman 24. Garel(8), intrinsic growth in girl 18. Chiari—epithelioma of vocal cord, girl 16. Marschik(9) arrives at the following conclusions. "No theory can explain entirely all cases of carcinoma, particularly those belonging to youth."

CLASSIFICATION

St. Clair Thomson(5) classifies carcinoma of the larynx in four distinct groups, namely:

A. Intrinsic.
B. Subglottic.
C. Extrinsic.
D. Mixed.

A. Intrinsic: The intrinsic group may be called cordal carcinoma. However, they embrace growths starting from the vocal cords, the ventricles, ventricular bands or interarytenoid region.

Conclusions by St. Clair Thomson(5) based on seventy cases and confirmed microscopically, accepted the view that intrinsic cancer first attacks the vocal cord in the great majority of cases. In addition they demonstrated the following facts.

1. The central portion or anterior half of the cord is the favorite location of intrinsic cancer of the larynx.

2. Cancer seldom originates on the posterior third of the cord or on the processus vocalis.

3. The two extremities in a true cordal cancer are generally quite free in early cases.

Another important fact about intrinsic carcinoma refers to the mobility of the cord. Impaired mobility is not always an early symptom of carcinoma. Hoarseness may be present and a cordal tumor may be visible for months before the movement of the cord is affected. However, free mobility is no evidence that a growth is not malignant. We have to remember that paresis or even fixation of a cord may also occur with syphilis or tuberculosis. When present, it indicates a comparatively advanced and not an early growth.

B. Subglottic Cancer: This originates on the inner or under surface of the vocal cord or in the subglottic area and chiefly in the anterior half of this region.

C. Extrinsic Cancer: Growths from the epiglottis, the aryepiglottic folds, the arytenoids. the pyriform sinuses and the pharyngeal surface of the cricoid cartilage.

D. Mixed: Combination of the extrinsic and intrinsic which present themselves in the advanced stages when it is impossible to determine the site of the origin.

Of these the intrinsic variety gives the laryngologist the most favorable results. This is due:

First—to the peculiar arrangement of the lymphatics within the larynx. Although very richly developed they do not anastomose with neighboring lymphatics, but form a network of their own.

Second—Intrinsic Carcinoma metastasize more slowly because of the resistance which the cartilage opposes to the spread of cancer.

Third—The intrinsic variety begins in the majority of cases as an epithelioma of the cord. This is fortunate because a carcinoma tends to grow parallel to the long axis of the cord, is slow of evolution and remains localized for a long period before encroaching extrinsically. A cordal epithelioma is slow to extend backwards on to the vocal process in that direction. Forward it spreads right up to the anterior commissure, but it is slow in invading the anterior extremity of the opposite sound cord. When it does extend to the opposite side, it may do so by creeping along, just below the anterior commissure, so as to invade the sound cord from its under surface. Therefore, the anterior subglottic area should be carefully scrutinized in all cases of cordal growth right up to the anterior commissure.

SYMPTOMS

There is no internal region of the body where cancer gives such an early warning sign as in the cavity of the larynx. Hoarseness, this may be slight at first, possibly showing itself by a little voice fatigue at the end of the day. Often it dates back from a "sore throat" or a "cold" or may be attributed to excessive smoking or use of the voice. This voice change or huskiness continuing over a period of two weeks or months and accompanied by discomfort in the throat, especially in an individual over 40 years of age, should call for a careful laryngeal examination. It is important to know that in the early stages there is no pain, no cough, no dysphagia, no complaint except a change of voice.

In later stages if the patient does not seek skilled advice or neglects it, the growth spreads until it so narrows the glottis that the hoarse voice becomes almost inaudible and dyspnea and stupor slowly develop.

TREATMENT

A biopsy with a local anaesthesia can always be made under an indirect or direct laryngoscopy in order to make a proper diagnosis.

If the carcinoma is intrinsic, and has not extended to the anterior commissure, a thyrotomy is the operation of choice. If an intrinsic carcinoma has become quite extensive within the larynx, or has become somewhat extrinsic, a complete laryngectomy should by all means be performed at once, and if caught early enough, before the glands are involved, good results are to be had.

One of the main obstacles that prevent the surgeon from obtaining good results following a laryngectomy is the attitude of the patient toward his malady. Realizing that his voice box will be removed and believing that he will perhaps never be able to carry on conversation with his fellow men, the patient, following the operation begins

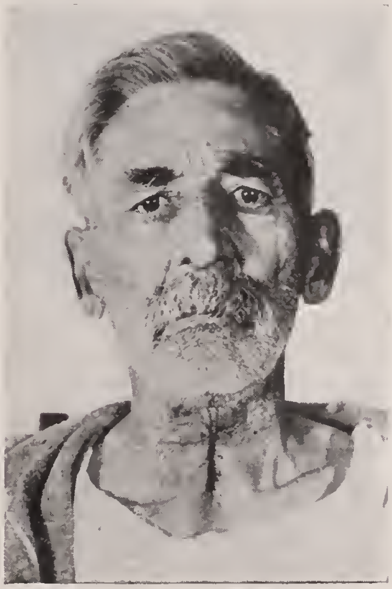

Fig. I. J. B. following laryngectomy.

to lose ground. He becomes melancholy, morose, depressed, languid, and refuses to eat and sleep and will not cooperate with the surgeon. He is ready to give up and it takes all the energy the surgeon can muster, to tone up the morale of the patient. This is one of the principal reasons for the high mortality rate of post laryngectomies.

However, this matter of losing the voice should no longer be considered a tragedy, for it is astounding what has been accomplished in this regard, for these unfortunates.

E. I. McKesson, with his vocaphone, Gordon New with his special artificial larynx, and J. E. MacKenty in collaboration with the Bell Telephone Co., have given us late models of great efficiency, by means of which these unfortunates rendered voiceless by laryngectomies, may speak intelligibly.

In Figure 2 you can see one of my patients with the latest Bell Telephone model of an artificial larynx which has certainly proven a God-send to this patient of such age. There are many of these various models in use, which are held in great esteem by their supporters, for one reason or another.

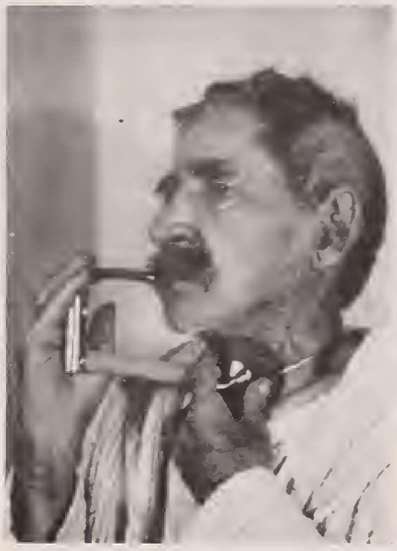

Fig. II. J. B. with Bell Telephone artificial larynx.

PSEUDO-VOICE

However successful the artificial larynxes may be, they have their limitations, for they are unsightly, conspicuous, and a constant worry to the patient, as regards their manipulation and care. Reeds must be replaced, the instrument must be taken apart daily, washed and cleansed for the saliva inside the instrument makes it sticky and interferes with the vibration of the reed. In cold weather, moisture condenses in the tubes, requiring separation of the instrument and cleansing.

Far better success can be had by the reeducation of the voice following these complete laryngectomies.

Figure 3 shows Mr. F. M., who had a complete laryngectomy in June, 1930. He has been taught the use of the pseudo-voice, which is very understandable. He converses freely, uses the telephone with ease, whistles, and has some modulation for various pitched tones in his conversation. He is employed as a night watchman and manages to get along very well. He has never used an artificial larynx and when demonstrated in comparison with one using an artificial larynx decided emphatically that he was well satisfied and did not care to even try one.

Fig. III. F. M. who uses only the pseudo-voice.

I began instructions for reeducation of the voice as soon as the feeding tube was removed following the operation which was about three weeks in this case, although Dr. Semon of Prague begins instructing his patients one week following the operation. The instructions have been daily, for fifteen minutes to one-half hour.

I first began by teaching the patient to belch, and after he was able to do this I instructed the patient to take in a mouthful of air, and hold it down in the lower portion of the pharynx. He was then asked to expel the air through his mouth, and at the same time to place the back part of the tongue against the posterior pharyngeal wall. At first this was very difficult, but after a short time this was mastered. He noticed that on each expulsion of air he would produce a vibratory sound. This lesson was continued until the patient could produce the sound with ease.

Next vowels and consonants were mixed into this vibratory sound, and then monosyllable words, and finally sentences.

Let us now consider the mechanism of this reconstructed, or reeducated voice.

Physiology of the Pseudo-Voice: The sites at which the vicarious pseudoglottis can be formed according to Stern(11) are (a) between the base of the tongue and the posterior wall of the pharynx; (b) between the back of the tongue and the tightly stretched velum; (c) between the strongly contracted posterior palatine arches of the two sides (d) between the contracted portions of the inferior constrictor muscle of the pharynx; (e) between the epiglottis and two folds formed laterally from the musculature of the pharynx; (f) at the upper hiatus of the esophagus, the esophageal mouth of Killian between folds formed by the cricopharyngeous muscle; (g) in some cases there seems to be no real pseudoglottis, the patient merely employing the sound produced by the eructation of swallowed air for phonation.

Stern(11) classified pseudo-speech into distinct types: (a) pseudo-whispered speech or the true buccal voice, (b) pharyngeal pseudo-speech, (c) esophageal pseudo-speech and (d) stomach pseudo-speech. I believe, however, that Stern's pharyngeal pseudo-speech and the esophageal are very closely allied and it will take a very keen observer to differentiate between these two.

An examination of the pharynx, in Case 2, by means of the laryngoscopic mirror, showed the anterior wall of the hypo-pharynx, beginning at the base of the tongue, extended down into a smooth hollow cavity formed by the removal of the larynx. The mucous membrane lining this cavity continued onward to the esophageal orifice. The epiglottis had been removed, and there was no communication between this cavity and the bronchus.

What are the factors then that enabled this man to produce a pseudo-voice?

A careful examination showed my case to be that of the pharyngeal pseudo-voice being formed between the base of the tongue and the posterior wall of the pharynx. The sound, or pseudo-voice originated mainly in the hypo-pharynx, produced by the action of the base of the tongue against the opposite pharyngeal wall. As these two parts came together a narrow split opening formed through which the continued air squeezed through, producing a sound. The mechanism of this split opening is formed by the styloglossus muscle, whose action is to retract the tongue, thus depressing it against the posterior pharyngeal wall. The compression and expulsion of the air is produced at the same time by the action of the muscles stylohoideus, and the posterior constrictor muscles of the pharynx.

Any attempt to press the base of the tongue forward, with a spatula, or to pull the tongue forward, so that the approach of the base of the tongue to the back of the pharyngeal wall is prevented, stops the patient from making any sound whatsoever.

The patient speaks with a more or less monotone voice. This is due to the tension of the parts or walls which bound the narrow hollow space of the hypo-pharynx, and is also due to the marked adhesion and connective tissue formed following the splitting of the hyoid bone. This tension and these adhesions permit little elasticity when an attempt is made to strain the voice in order to reach high tones, however, some modulation is gained in time, as the patient continues to use the voice.

The second factor, which I feel sure aids in the construction of the pseudo-voice is the part taken by the esophagus. The amount of air taken into the hypo-pharynx is not sufficient to produce more than two or three words, through negative pressure. Therefore, there must be a reservoir to retain the air that will feed into the pharynx, in order to continue the conversation. I fully believe that a certain amount of air is taken down through the esophagus into the stomach. Since the upper part of the esophagus contains striped muscle fibres, instead of smooth muscle fibres, the expulsion of air from the esophagus, into the hypo-pharynx, when desired is assured. This fact was proven when on examination I found that the air flowing through the esophageal opening would cause small bubbles as it acted upon the saliva.

Thus the air which is retained in the stomach is given off through the esophageal orifice as needed to produce sound. This maintains continuous speech and does not compel the patient to gulp air everytime he desires to speak a word.

The soft palate, nose, lips, and nasal sinuses are not taken into consideration in the production of the pseudo-voice. However, they are the essential factors in the production of the unvoiced sounds, such as f's, th, sh, p, t, ch. k, h, etc.

Case 1. Mr. J. B., age 77 years. Entered University hospital, Omaha, Neb., July 29, 1931.

Complaints: (1) Difficulty in breathing; (2) hoarseness of voice; (3) loss of weight—twenty pounds in past three months; (4) occasional blood stained sputum.

Onset and development: First noticed a hoarseness of voice and some dyspnea three months prior to entrance at the hospital. Hoarseness progressively became worse until could only be heard above a whisper and then with effort. Frequently would cough up a bloody streaked sputum. Lost twenty pounds in past three months.

Examination: Showed a man of advanced age, skin loose and dry, showing a recent loss of weight, in no apparent pain but able to speak in only a hoarse forced voice. General physical examination was more or less negative. Heart and lungs—no pathology; mouth—teeth out; tonsils—atrophic; pharynx—secondary pharyngitis; ears—retraction of both drums.

Laryngoscopic indirect—showed tumorous mass involving left vocal cords extending from anterior commissure practically to left arytenoid—cord immobile and arytenoid fixed. Glandular adenopathy not enlarged.

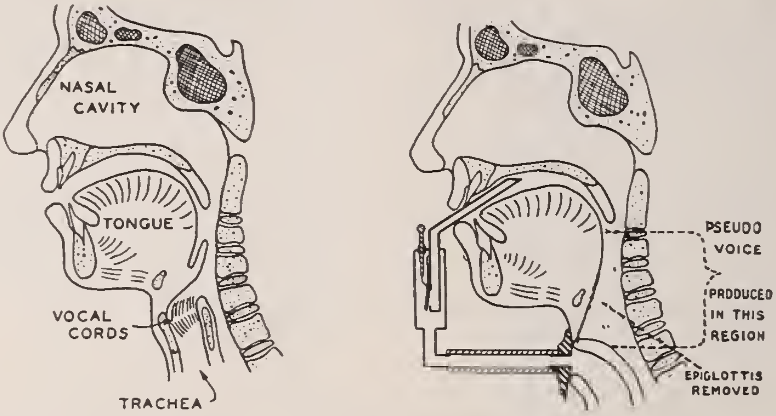

Fig. 4—Left: in normal speech production, air passes from the lungs through the trachea and vibratory vocal cords to the resonating cavities of the head. Right: when the trachea is terminated in the neck, it is extended by rubber tubing and the vocal cords are replaced by an artificial larynx containing a vibratory metal reed

Laboratory: Blood, Hb 78%; R. B. C. 6,130,000; W. B. C. 5,000. Lymph 32; Polys 68. Urine, negative. Wassermann, negative, two tests. Repeated sputum, negative for TBC. Biopsy on August 7, 1931, Dr. Eggers, Uni. of Nebraska.

Pathological report of larynx: Stratified squamous epithelium and extending into deeper tissue. Numerous cords and masses of epithelial cells. These are fairly well differentiated for most part and keratinization in several places. There is a mild chronic inflammatory reaction in the surrounding tissue.

Diagnosis: Squamous cell carcinoma of the larynx.

Progress: August 12, 1931. Tracheotomy performed under Avertin and local Novocaine 1% anaesthesia. Hyoid bone split per Gordon New operation. August 18, 1931, complete laryngectomy performed under Avertin and Novocaine. He was given an artificial larynx October 6, 1931, and he was able to converse quite readily before he was dismissed from the hospital December 16, 1931.

Case 2: Mr. F. M., age 50, came to our office two years ago, on April 18, complaining of hoarseness and forced phonation, which made it difficult for him to carry on his work as watchman. Examination at that time showed a paralysis of the right cord and arytenoid, roughness and raggedness of the right cord—no ulceration. Diagnosis: Papilloma of the right cord.

One year later, April 18, he returned. The hoarseness was more noticeable. There was no pain in the larynx. Examination showed the papillomatous condition had increased and extended over entire length of right cord. Section showed fibropapilloma with questionable malignancy. Advised operation, but patient refused.

Six months later, October 4, 1929, returns with still more hoarseness. The patient this time consented to the removal of the tumorous mass, and he was advised to have immediate removal of all infected teeth, etc., to clear all foci of infection.

On February 21, 1930, Dr. Lemere and I performed a two stage thyrotomy under a rectal synergistic analgesia. The first stage, clearing and separating the musculature, and dividing the Hyoid bone. The second stage, a thyrotomy, was performed two days later, in which the cartilage was split and all inner contents, on both sides were shelled out, and the right arytenoid removed as it looked suspicious. A tracheal tube was inserted and the cartilage closed.

A pathological report by Dr. Egger showed a stratified squamous epithelioma.

A tracheotomy tube was removed in two days and the patient made an uneventful recovery.

Four months later, June 15, 1930, the patient returned complaining of an extreme dyspnea, and obstruction to breathing. He was rushed to the hospital, and an emergency tracheotomy was performed under a local anaesthesia.

Ten days later, under an avertin rectal anaesthesia (5.8 gms being used) supplemented with a novocaine 1% locally, a complete laryngectomy was performed, including the removal of the epiglottis. The larynx, when examined, was found to have a recurrent carcinoma with a practically complete stenosis of the tracheal end of the larynx. The opening at this end was about the size of a match stick.

The patient recovered nicely and was discharged on July 20, 1930, after one month in the hospital. He feels good,and has gained 34 pounds. The patient now speaks with a pseudo-voice as described above.

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NEBRASKA HOSPITALS AND THEIR RELATION TO THE PRACTITIONER

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It may seem somewhat presumptious on the part of your speaker to believe that you who have assembled to listen to and discuss matters of purely scientific interest would be at all concerned in devoting any time to the consideration of so common place a subject as Hospitals. You come daily in contact with them, perhaps sometimes see too much of them. Many, nay most of you, are or have been at some time, members of their Staffs or Boards of Trustees. Some of you have been actively instrumental in their organization and advancement; not a few of you have doubtless built or established your own institutions. You are therefore, well acquainted with most of the intricacies and problems of their operation.

You have no doubt read and heard much during the past months about the so-called "high cost of hospitalization, hospital care for the patient of moderate means (which means most of us), the exploitation of the physician by the hospital" and many other similar topics. Who has not? Many pertinent facts have come to light vouched for often by the ablest and most eminent of our profession. Those of us engaged in this particular phase of medical activity await with interest the ultimate recommendations of the five year survey now being made by the committee on the costs of medical care, already in its 4th year of work under the direction of Dr. Ray Lyman Wilbur. Both the medical and lay press have been full of articles dealing with proper hospital service, its cost, its essentials, its luxuries, its demands of and by physicians and any number of related problems. Never was there a more free or general discussion of the "economics of medicine", of the opportunities for organized medicine and of the place which the individual practitioner, be he engaged in the lowly general practice of a country community or the more highly developed specialty of his city colleagues or even comprising part of a group clinic, must, should, or elects to play in the scheme of twentieth century American medicine.

It is not the purpose of this paper to attempt to add anything of vital significance to all that has been said on such matters. Such would be futile. Neither do we desire to inject into a meeting of this character anything which might be construed as below the highest aims of the profession. Medicine is and must always remain a profession, its art and science fusing to make it such, differing thereby from the vast number of vocations which seek always to be considered professional in character, more often than not without due grounds.

The running of hospitals on the other hand should be considered a business. A business, however, which must be carried on first, for the benefit of the community which it serves, but secondly in the way demanded of it by those who practice therein, and subject always to the varying standards and ideals of those who comprise its staff. Under any other circumstances it ceases to fulfill to the highest degree its obligations or to attain its ultimate objective. The hospital is in other words a service institution. There is no truer statement to be made of any institution than that it reflects the character of those who work within its walls. Precisely because, therefore, it is the physician who activates these things of stone or brick or wood that we call hospitals, these organizations that are so often said to be soulless, because it is he who is most vitally concerned; for this reason, if no other, do we have the temerity to center your thoughts briefly on what sort of institutions you have provided yourself here in Nebraska, and what is and should be your immediate concern therewith.

It is often said that the "hospital is the workshop of the medical man". We rather dislike that expression true though it may be in some respects. It rather implies to us the idea of a "dinner pail job" like a Ford factory, and further, its exponents are inclined to use it as a starting point for an argument that, having supplied the physician with a place to work and tools to use, he should without question accept graciously the obligations accompanying its use and anticipate little in the way of return even though he be asked to carry a considerable burden in the form of attention to ward, service, or charity patients. Does not this attitude sound a familiar note to some of us? And does it not rather belittle the physician, not only in his own eyes but in those of his patients that he slave so conscientiously for a mere pittance in the guise of the prestige or other abstract value supposedly gained thereby? Or shall we say that it is in accord with professional ethics and our ideals of medical practice that the physician accept such as his lot; and do the benefits in the way of opportunity for observation and study, professional contact with others, etc., afford adequate recompense? Is not the time past when physicians can be expected to give unlimited service to hospitals without payment? We leave it to you to answer. We rather think it is. I was rather impressed by a recent statement made at a hospital meeting in New Orleans upon good authority, that ½ to ¾ of patients in general hospitals in this country pay no physicians fees. But of this more later. To turn to our institutions in Nebraska, what can be said of our hospitals and their relations to the profession,—to you?

We propose to consider this from three angles:

1. A brief review of hospital facilities in Nebraska.
2. What they offer and should offer the physician.
3. What the physician offers and should offer them.

May I direct your attention first then to a few figures which may be more or less familiar to you but will bear emphasis if presented perhaps in a new light. Are you aware that there are approximately 7,500 hospitals in the United States containing 900,000 beds with a capital investment of 3½ billion dollars? From the latter standpoint hospitals rank 5th in industry. One person in every 10 uses a hospital every year. The increase in 1930 over 1929 in the number of patients hospitalized was 36,000 and the increase in hospital patient days over 13 million. During the past 50 years hospital beds in use in this country have increased 15 times faster than the population, (from 150 to 7,500 institutions), surely an index of the value of such places in the eyes of the public and medical men. In the past 20 years hospitals in this country have increased in number 54% while for the same period bed capacity has increased 127%. In Nebraska in 1900 there were only 23 hospitals, there are now 111; an increase of 88 in 30 years. At least two-thirds of the licensed physicians have some direct connection with these hospitals. Turning to Philadelphia for a moment, a recent survey of medical facilities there showed that 27% of the money spent by residents for prevention of illness and care of the sick went to hospitals while 26% went to the physicians; another exemplification of the close relationship of physician and hospital. It is interesting that approximately 1/3 of the present 7,500 institutions in the country have less than 25 beds, another ¼ have over 100 beds, the remainder being, therefore, of moderate size. Bear in mind that this includes all kinds of hospitals.

Mr. Michael Davis of Chicago is authority for the statement that "recent tendencies are away from the establishment of special hospitals for acute diseases and toward the incorporation of such specialties (i.e. mental, tuberculosis, pediatric, orthopedic, etc.,) into general hospitals." Government agencies, that is, (state, county, etc.) provided 70% of the days of service rendered in 1930 while private institutions provided the remaining 30%.

The distribution of hospitals varies greatly:

Wisconsin has one bed for each 111 persons.
South Carolina has one bed for each 749 persons.
Nebraska has one bed for each 152 persons.
Iowa has one bed for each 143 persons.
Kansas has one bed for each 170 persons.
South Dakota has one bed for each 148 persons.

To turn more specifically to Nebraska, what do we find?

TABULATION OF HOSPITALS IN NEBRASKA
RATING OF NEBRASKA HOSPITALS

Registered	111
Refused Registration	24
Approved for Internships	9
Approved for Residencies	1
Standardized by A. C. S	16
Accredited Nursing Schools	19
Members of A. H. A	8

TYPES OF HOSPITALS

		Beds	Patients
General	89	4104	2493
Mental	5	4836	4549
Tuberculosis	1	156	112
Maternity	2	29	15
Isolation	2	160	8
Orthopedic	1	105	102

		Beds	Patients
Skin & Cancer	1	30	11
Institutional	9	370	191
Others	1	21	10
	111	9711	7491

CONTROL OF HOSPITALS

		Beds	Patients
Federal	5	194	73
State	13	5769	4903
County	2	187	170
City	4	107	25
Church	19	2034	1275
Fraternal	1	96	42
Independent	10	676	524
Individual	57	1048	479
Total Gov't.	24	5857	5171
Total Non-Gov't.	87	3854	2320

COUNTIES WITH HOSPITAL FACILITIES

		Nebr.	U.S.
1921	34 Counties	37.6%	44%
1931	46 Counties	49.5%	59.5%

	1920	1930	Increase
Pop.	1,296,372	1,378,900	6.4%
Phys.	1,965	1,800	-8
Hosp.	92	111	20
Beds	7,321	9,711	33

In 1920 1 physician to every 4 beds.
In 1930 1 physician to every 5.3 beds.

With this as a background may we for a moment consider what the hospitals should and do offer physicians.

First of all a place to which to take their severely ill patients. Such a place it seems to us must meet the following qualifications:

1. It must be easily accessible.
2. It must be able to meet the patients' financial circumstances, affording some choice of service for those of different means, and not forgetting too that the doctors must be paid.
3. It must assure physicians of adequate personnel to properly safeguard and care for the immediate wants of their patients.
4. It must have ample facilities to carry out at least the simpler scientific procedures, both of diagnosis and therapy.
5. It must be controlled by those with true appreciation of the problems of the sick and the doctors, creating an atmosphere which will react favorably upon the psyche of the patient.
6. It must offer the physician an opportunity to enhance his own knowledge of each particular patient and disease as well as to increase his general scientific information. All these are what they should offer, let us enlarge upon these points and see what Nebraska Hospitals really do offer.

First, are they easily accessible? We venture to say that for the most part they are. We have already spoken of distribution by counties. Were there a map available we could show you graphically the degree to which their locations correspond with the density of population. Did I mention that 29 of the 80 hospitals are in Douglas and Lancaster counties corresponding fairly well with the more congested eastern half of the state. One need hardly comment on the extent to which telephone, good roads and railroad connections, even airplanes, help toward the speedy connection of sick patient with the hospital. True. there are some difficulties to be met with where distances are great, and we happen to be in a position personally to have seen occasional instances where transportation has been no negligible factor in the unhappy ending of a critically ill patient.

There enters here another phase to be considered, that of the care of those who need special facilities. The mentally ill, the tuberculous, the venereal or otherwise contagious, the convalescent, the aged chronic institutional patients. We might run the whole gamut, including pediatric, industrial, maternity and cancer homes. How does Nebraska handle this problem? I have already mentioned the tendency in some quarters to include some or all of these in one general hospital. Whether this be wise or not it is hard to say. Success has surely been met in some instances. But regardless, there will always probably remain our specific institutions for those accordingly afflicted.

The problem of mental illness seems to have come recently much to the front. That our hospitals for the insane and those for the feebleminded and epileptics are crowded to the doors is a fact not unique in Nebraska. Geographically they are accessible, yes, practically most of you are aware that they are immediately, certainly not. The solution of this problem involves much beyond the scope of this present paper and must be left to maturer intellects and programs. Let us call attention only to to this: it is estimated that by 1934 the United States will have over ½ million people in her mental institutions. Nebraska has already approximately 5,000. Almost ½ of her hospital beds are devoted to this type of patient, a factor true of the country as a whole, and yet we cry for more. These beds show a 94% occupancy compared to a 64% for the average general hospital. One patient is admitted to such an institution every four minutes. Some private institutions have helped to bear the burden of this but usually at an increased cost.

As for tuberculosis, one meets much the same difficulty. Nebraska boasts of but one tuberculosis hospital. woefully inadequate to care for many of those cases which most need segregation and adjustment to the daily well-regulated regime which only hospitalization can teach them. We are fortunate that climatic conditions are in our favor and that the number of tuberculosis individuals is relatively small compared to that of many of our more congested states. Facilities for hospitalizing the tuberculous? Yes, we have some. But did you ever try to get a patient into the Kearney institution? Accessible, yes, but practically it means weeks or months of waiting. We are happy to see evidences of concentrated efforts to remedy this.

The contagious situation seems to us even worse. We tremble to think what a serious epidemic of any proportions would mean to the state. Omaha, with its 200,000 people provides only about 40 beds for such an emergency. Private and general hospitals throughout are essentially unequipped to handle isolation cases. Which brings us to the problem of venereal disease. Much of this does not require hospitalization but a certain per cent does. With limited resources we endeavor to treat those suffering from its primary or advanced stages. Any one who has attended the four or five clinics available has a pretty good idea of how much of this is afloat in the community and of how much of it goes without thorough or complete treatment. Why? Practitioners as a rule are not terribly concerned in the eradication of this evil. Perhaps such is impossible. Only when they are confronted with someone desperately needing a bed and active treatment do they attempt to inveigle some hospital authority to accept him and wonder where they should turn. Perhaps this is the proper place for organized medicine to intervene. Nebraska facilities for venereal control? Where are they except in the overburdened clinics of Lincoln and Omaha and such private hospitals as choose to accept such side by side with other patients? The accessibility of hospitals for orthopedic patients, for children, for maternity cases, Nebraska meets perhaps as well as most states. The handling of advanced carcinoma cases or of chronic invalids or convalescent cardiacs leads us again into the still unsettled field of economic medicine, of old age pensions and sickness insurance, from a discussion of which we must for the present refrain. We have, we think, said enough about our first point, the accessibility of hospital facilities to Nebraska physicians. Let us add just one more word. The charge is often made that there is too much "red tape", to gain admission of patients to hospitals. That there is a certain amount of formal procedure connected with any institution is unavoidable. The hospital must know something of whom it takes within its doors. Such is not only good business, it is a protection to the physician. We believe Nebraska hospitals as a rule seriously endeavor to reduce this preliminary negotiation to a minimum. We believe the physicians should familiarize themselves with the requirements for admission of those hospitals with which they are apt to come in contact and should endeavor to conform to such. They can help tremendously by so doing.

We stated secondly that hospitals should be able to meet the patients circumstances with a flexible scale of rates. Do Nebraska hospitals do so? Any discussion of this leads us at once into one of the most pressing of questions before the doctors of today and we have promised to add no further verbiage to the quantities that have been uttered on this point. May we sum it up in a few terse sentences. Nebraska hospitals do meet a patients' financial situation in a fairly equitable way. They do not insist on large down payments. They do offer accommodations ranging from $1.50 up. They do offer terms of payment suitable to the circumstances. They do not charge excessively for extras, (i. e. use of operating room, dressings, anesthetics, drugs, etc.) They do not offer many luxuries and they do not for the most part unduly deprive the physician of his fee by a high per diem room charge. They do accept a high percentage of "charity" work. There are, of course, exceptions but the above assertions can, we think, after a careful study of several institutions, be safely made.

If we might suggest what further they should do in this regard we would say: They should establish more uniform rates by agreement amongst themselves, with a sharper definition of what constitutes a basic cost for different types of services. We venture to assert that only a few institutions can tell accurately what it costs to run their operating room for a 2 hour operation or how much expense is involved in the performance of an autopsy. They should show less favoritism to patients of certain staff members without due cause for such being definitely established by vote of staff. They should clearly advise patients what they are being charged for and not present a blanket statement. They should establish with their physicians a definite policy relative to collections for payment of hospital accounts. They should obtain complete information relative to a patients ability to pay. With such things done we venture to believe that the hospitals will even more completely meet our second qualification of service to the physicians.

3d. Hospitals must assure physicians of adequate personnel to care for their patients. We are happy to say this is usually true in Nebraska, else our hospitals would not be approved. Particularly in the smaller institution is this difficult sometimes to realize. All of you know how disconcerting it is to find orders left but not fulfilled, dressings improperly done, medication wrongly or poorly given, interns not available, a patients' simple wants unattended to or delays in the operating room. These things a hospital owes its physician to conserve his time. Nebraska has quite well provided itself with efficient nurses to assist in carrying out these things. It has not quite broken away from the traditional practical nurse to replace her with the younger registered graduate one. She must inevitably come to this, however, though not without recognition of the valuable contribution of the former group and the as yet sometimes all too-evident shortcomings of her scientific sister. She still wrestles (in our larger institutions) with the problem of interns, having in some places not quite accepted these unruly upstarts for their full value as medical maintenance men, the mainstays for much that must be done, and the hope of her future medical interests. She knows almost nothing of that link between patient and home or environment, the social worker. Not the benignant lady with a flare for gossip and meddling, but the college bred woman who has studied and knows the best approach to a stubborn patient or where and how to get the children looked after while the parents are incapacitated. Again Nebraska has only recently been able to assure you that your patient will get a properly balanced diet or your diabetic a low carbohydrate meal. She now recognizes a dietition's value. In the smaller institution such a person may be shared jointly by several. Pathologists, x-ray technicians, physiotherapists are difficult to support by the small hospital but are a necessary step. Have I covered the third qualification of hospital service to the physicians? Have I suggested that trained personnel is being offered you more each year with still much room for recognition?

4th. Ample facilities for diagnosis and therapy. Such the physician must have and even the smallest of our institutions are now installing x-ray outfits, the most costly perhaps of all equipment. Nebraska hospitals do not appear to be lacking seriously in this respect. Small laboratories for routine examinations, metabolism machines, autopsy rooms, operating and obstetrical tables, and sterile supplies, are usually within reach. We shall not dwell on this aspect having said perhaps too much already on the monetary matters which after all determine equipment.

5th. Are those in control of our hospitals fired by a real desire to assist the patients and appreciate the doctors view point? We have mentioned the relative number of physicians, nurses and laymen in charge. There might be grounds for argument here as to which makes the best head for such responsibilities. We are inclined to think it a matter of the individual rather than his calling. Questions have been frequently raised as to the proper training for hospital executives. Several experiments have been tried in the way of schools for educating such; rather unsuccessfully, however, leaving us with the time tested school of experience as about the only valuable one. There is little doubt I think but that most of the hospitals in Nebraska are controlled by those qualified to appreciate their problems and responsibilities and actuated by the highest of motives, with as a rule a kindly ear for the suggestions and criticisms of their physicians.

6th. Do our hospitals offer opportunities to the physician to really study his cases and increase his knowledge? In a large measure, of course, they do, yet they might improve their relation here. Let them develop the idea of more complete records, of more adequate library facilities, or more frequent conferences (they need not be elaborate or inclusive). Make them more of a common professional meeting ground. Provide adequate facilities for the comfort and convenience of their physicians and establish a definite basis for appointment to the staff. Hospitals have yet to solve the question of how best to aid their staff members in obtaining quickly adequate records of patients. Nebraska hospitals should meet their doctors halfway in this attempt either by stenographic help, interns, record librarians or similar clinical assistance. They should recognize the importance and value of conferences with reviews of the work accomplished and a proper evaluation of methods and individual practices; and take steps at correction of faulty ones.

I have indicated the hospital's side of the picture, may I now, conclude this paper with a few thoughts as to what physicians do and should offer their hospitals here in Nebraska? What should be the physician's attitude toward their institutions? How does he help them and what else may he do to further their advancement? That the majority of our hospitals are receiving support and co-operation from the physician there is no doubt. That they deserve such support providing they are ethically and correctly managed, we have already agreed as a corollary to our initial statement that hospitals are what their staff physicians make them. I suspect that there is hardly one amongst you who at some time or other has not felt quite aggreived at some particular institution for not being able to take care of your patient properly or not having handled affairs exactly as you thought they should be. We admit that it is very difficult for one to maintain his equanimity and faith in his profession when sometimes (particularly of late), he sees a large share of his patients' income go into the exchequer of the hospital knowing that he must wait months for his own reward if perchance there is any left to come his way. Yet most of such thoughts are but fleeting and most similar grievances pass. The degree to which hospital beds and hospital days have increased bears eloquent testimony to the conduct of the profession in not allowing such personal considerations to react to the detriment of their patients and if they insist that the stay be made as short as possible and that "extra" charges be reduced it is as much from a desire to save their patients undue expense as from any ulterior selfmindedness. Indeed it has been good for the hospitals to have had such insistings. It has opened their eyes to their own shortcomings and resulted in a closer scrutiny of their operation. Perhaps the development of outpatient service has been an outgrowth of this feeling in an attempt to shorten or avoid hospital stay. I have mentioned the increase from one in every 35 persons to one in every 18 visiting dispensaries from 1921 to 1929. Perhaps the public have been more instrumental in this than the doctors. That there is some abuse of the free clinic has been widely agitated. Undoubtedly this is true. But the most comprehensive survey of this question of which we know, made a few years ago, estimates the abuse at less than 1%. At any rate we do know that properly conducted cardiac, diabetic, prenatal clinics or outpatient departments will reduce the necessity of prolonged hospital stays and are both scientifically desirable and economically sound. We think perhaps the physicians would do well not to lose sight of this fact.

May we be specific in suggesting a few ways in which physicians might be of greater help to hospitals and incidentally serve their patients better? In the first place a physician referring a patient to a hospital may offer the hospital what he knows of the patient's illness, his idiosyncracies, his family circumstances; if he suffers from venereal disease or is a chronic complainer, if he is over-exacting in his demands or is delirious or without funds. Surely fairness demands that the hospital be so informed. It doesn't take any admitting officer of a hospital long to determine who the physicians are who insist on sending in patients with one diagnosis who present also a second about which nothing has been said. If I may be permitted a personal comment, having dealt with this question at first hand for some time at the university with contacts with a good many Nebraska physicians, it is to the effect that most of the physicians in the state are square-shooters in this respect. There are the few whose names experience has taught us to be on our guard against as endeavoring to conceal something. These few we will have always with us, but you do owe it to your hospital to frankly state what you desire help with, and you can offer them invaluable aid in informing them of the details of your patient's condition. Most hospitals will gladly overlook an incorrect diagnosis but they do not so readily forget wilful misrepresentation. It sometimes happens that a disturbing patient becomes too much of a burden, there again you can offer your assistance in assuming responsibility for his removal or proper handling, and you will find the superintendent, I am sure, not unappreciative of your co-operation.

A second thing you may offer your hospital though you may not have thought it of much importance, is advice to your patient as to what he may expect upon arrival and afterward. To most people a hospital is a strange and exacting place. How much more congenial it becomes if they know in advance something of what to expect. So, tell your patient something of what he may have to pay, what he should take with him, how long he is apt to have to stay, that he will be questioned by an intern or bathed by a nurse, that the relatives can visit him only at certain hours, that they probably cannot go in the operating room, that he may submit without fear to B. P. readings or the taking of a blood count or Wassermann, that a special nurse is not necessarily required, that a $6.00 room will give him all he needs without the extravagance of a $12.00 one. Let us not pretend to advise you concerning how you treat your patient but these things take only a moments thought, react favorably upon the patient's mental picture and certainly smooth the way for hospital attendants to make them feel at home.

You can offer your hospital your services in instruction of nurses and interns. Many of you do it willingly. That a large part of nursing education is supplied voluntarily by attending physicians is well known. Without going deeply into the question let us say that there is recently some doubt as to the entire wisdom of this and its economic consequences as at present carried out. Perhaps there should be some return for this service. Regarding interns, an equally complicated problem presents itself. Undoubtedly staff physicians have an obligation to their hospitals for the instruction and supervision of these young men. That is primarily why the latter are there. Hospitals vary tremendously in the degree to which their interns are controlled, from the larger charity institutions where the intern does pretty much as he pleases with little supervision because of a part time non-paid staff, to the smaller private hospital where all patients are individually private patients and the intern rather skirts around the edges, watches his staff man examine and treat and thinks himself lucky when he gets an opportunity to listen to the patients chest or order a cathartic. In the former place the physician is inclined to say "You get him worked up and try taking that fluid from his chest and I'll see him tomorrow." In the latter he is inclined to leave his orders and make his rounds with the nurse and if he does think of his intern to advise that "Mr. .... is a little particular and perhaps you had better not bother him today." It requires much patience and not a little time to properly teach an intern things he should know. You can offer your hospital help in this respect. Unless our conception of the internship is all wrong and it seems from developments in the past 20 years not to be, let us return to some other arrangement, possibly the old preceptorship idea already being revived in some states (Michigan and Wisconsin) with success. I can do no better than to quote Dr. Louis Wilson of Rochester on this subject. He says: "If the hospitals would make an honest critical survey of the opportunities for supervised clinical experience that they are actually rendering to the intern, I believe a very large percentage of them would cease their efforts to be recognized for internships. A hospital should be sure it has enough clinical material of general character which can and will be used for clinical instruction of interns, that it has a staff, the members of which will give time to personal, clinical instruction of the internes, and that it has a pathologist competent to make and interpret the results of necropsy and to secure the co-operation of clinicians in a clinico-pathological conference on each case, while the case is still fresh in the memory of all concerned. If the hospital does not have such facilities and personnel, in my opinion it has no right to accept interns. If the hospital does not have adequate instruction of interns where shall it turn for its chief medical service? The next step is obviously the paid resident." There are today more internships available than there are graduates from medical colleges, a situation the reverse of a few years ago. Nebraska physicians, as their hospitals develop, would do well to consider this question.

What else may you offer your hospitals. A few more less-important points and I shall be through. You may help obtain permission for autopsy. Though that is for your own gain it will elevate the standing of your hospitals and it does not take a large institution to provide proper facilities for this. You can see that records are complete, as much so as in your office. This requires co-operation of the hospital administration, of course, yet you cannot avoid a certain responsibility in that regard. Anyone associated with institutional work comes sooner or later to a consideration of this question which has for long been a topic of dispute. We regret that time does not permit further mention of it here. You can offer your suggestions and carry them out in the handling of hospital materials. Do you use too many sponges or dressings? Do you break catgut needlessly, do you insist on every new drug that appears? Any alert executive will give heed to your words in such matters and appreciate your efforts at economy.

You can take part in conferences of hospital matters. You can consider the hospitals' regulations regarding a courtesy or consulting staff, introducing such colleagues as are acceptable and avoiding the use of a younger office assistant without first gaining for him recognition. You can avoid conflicts with other departments or the administration by recognizing the latters' prerogatives. Because you are a department head or send in many patients its doesn't entitle you to dictate the location within the house of any patient. You can offer much in the way of advice and counsel. As we said at the outset, the hospitals are yours and what you make them. Your relations to them in Nebraska are, we believe, very largely harmonious and constructive.

If we shall have accomplished anything by this talk it will, we hope, be to have made you a little more aware of the bonds existing between the physician as such and these houses of the sick, to have pointed out possibly some places for improvement and to have given you pause a moment to look as from the inside out rather than the reverse.

Barber: "You need a shampoo badly, Doctor. May I?"

M.D.: "I know it; and you've had a sour appendix for years, too, but I don't nag you about it."

Doctor: "My dear sir, it's a good thing you came to see me when you did."

Patient: "Why, doctor? Are you broke?"

MYOMECTOMY DURING PREGNANCY: A CASE REPORT*

DR. CHARLES O'NEIL RICH, DR. EARL C. SAGE,
Omaha, Nebraska.
DR. H. D. LEE,
Murdock, Nebraska.

Mrs. M. B., University hospital, No. 35847, white, aged 29, Gravida III, entered the University of Nebraska hospital, August 5th. 1931, with a history of cessation of menses, her last period occurring sometime in March, 1931. If pregnant, she would deliver in December, 1931. Her abdomen had enlarged in the last five months but there were tumor masses—both in midline and to the right, extending into right flank. (See photo of patient, figure 1). She entered the hospital on the surgical service, Dr. Charles O'Neil Rich being in attendance.

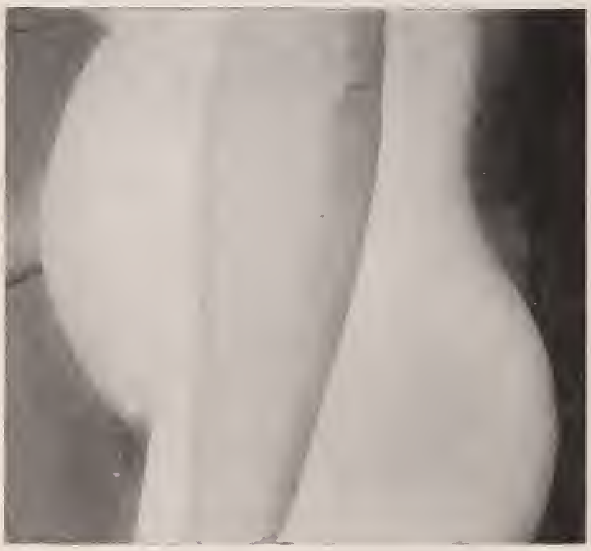

Fig. 1. Mrs. M. B., aged 29, Gr. III, 5 months pregnant, complicated by another abdominal tumor.

Onset and development: One year ago patient stated that her abdomen was enlarged slightly and that she felt a mass in the lower abdomen about the size of an orange, but that this mass got smaller and disappeared entirely as far as she knew. She complained of pain in the lower abdomen at various intervals during the last year. Her first pregnancy resulted in a still birth, the delivery being very difficult; the second pregnancy resulted in a living child, a version having been performed.

Physical examination was negative except for the abdominal findings. There was a rounded mass in the center of the abdomen extending two finger breadths above the umbilicus, with a secondary tumor mass extending into the right flank, the upper border of which was 2 inches higher than the tumor in the midline. The diagnosis at this time was pregnancy complicated by a large cyst of the left ovary. Several staff men examined this patient, but no uniformity of opinion could be obtained as to which mass was the pregnant uterus, as the foetal heart tones could not be heard.

A roentgenogram was made of the abdomen and it was found that the tumor mass pushed over in the right flank was really the pregnant uterus. (See figure 2). X-ray report—study made of lower torso demonstrates foetal skeleton resting in right flank with its head just beneath the liver and buttocks just above the iliac crest, size of 5 month foetus. The foetus is displaced to the right by the tumor mass in left pelvis.

Pregnancy could not continue with such a large accompanying tumor mass, so laporatomy was performed with the pre-operative diagnosis of pregnancy and ovarian cyst.

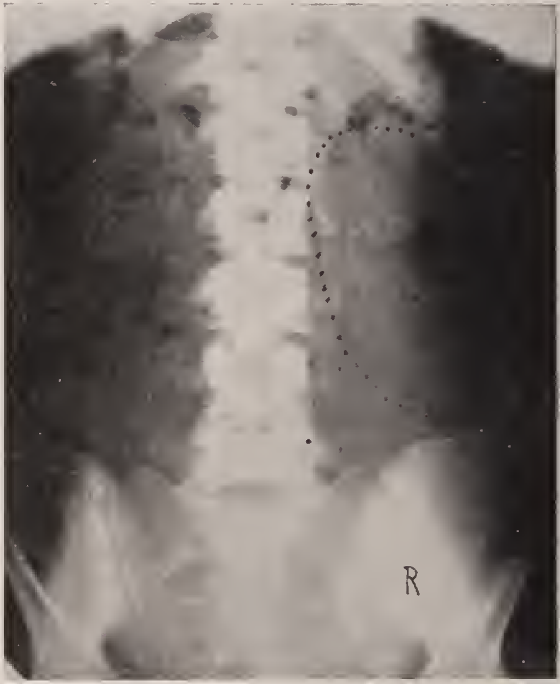

Fig. 2. Roentgenogram showing foetal skeleton in right flank, buttocks above right iliac crest.

August 10th, 1931. Dr. Charles O'Neil Rich opened the patient's abdomen and a large interligamentous myoma was revealed as the tumor mass appearing in the midline, extending from the lower uterine segment to a region above the umbilicus. Its weight was 3120 grams or 6.8 pounds. The area of attachment measured 3x2¼ inches and the tumor itself measured 8x9x3¾ inches. (see figures 3 and 4). The small nodule seen in the photograph protruded into the pelvis, pushing the cervix over to the right of the vaginal vault.

Postoperative course: There was an uneventful recovery until the 6th postoperative day when the patient's temperature rose to 104°. Patient had two chills. Urine showed pus cells.

8-17-31. 7th p. o. day. Temperature 106°. Chest x-rayed but the findings were not sufficient to account for the temperature rise. There was some dullness in right axillary region but no signs of pneumonia. WBC 17,600.

8-18-31. 8th p. o. day. Abdomen slightly distended. Patient had two more chills with temperature of 106°. Foetal movements felt by vaginal examination.

8-19-31. 9th p. o. day. Urine shows 25-85 WBC to the field. Patient had a chill, temperature 104°.

8-20-31. 10th p. o. day. Patient had chill, temperature 103°. Feels better and starting the 11th p. o. day the temperature curve gradually fell and was normal on the 16th p. o. day.

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*From the University of Nebraska, College of Medicine.

8-27-31. Patient transfused 17th p. o. day on account of anemia. Hgb. 49%; RBC 3,660,000; WBC 6,000; blood Wasserman negative. Urine shows trace of albumen and occasional WBC on discharge from the hospital, the 20th p. o. day.

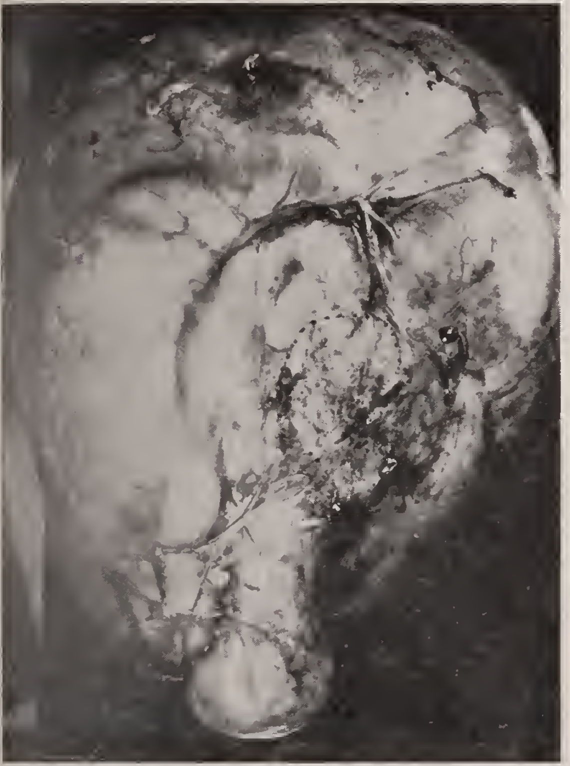
Fig. 3. Interligamentous fibromyoma. weight 6.8 lbs. or 3120 grams—area of attachment measured 3x3¼ inches. Tumor measures 8x9x3¾ inches. Tumor removed from pregnant uterus.

Patient was dismissed from the University Hospital with instructions to report at regular intervals to her doctor at home, the patient lived out-state. She was to return to the hospital for delivery as it was thought advisable to do a caesarian section at the time of delivery on account of the potentially weak spot in the lower uterine segment where the large fibroid had been attached.

Delivery: Dr. H. D. Lee, Murdock, Nebraska, wrote us that the patient started to Omaha, December 24th. Her contractions became so severe that she stopped at her mother's home, called Dr. Lee and delivered a 7 pound baby girl at 1:20 a. m., December 25, 1931. Her contractions started at 9 p. m., December 24th, so the entire labor took only four hours and twenty minutes in contradistinction to her former difficult deliveries. L. O. A. position at the time of delivery.

Dr. Lee administered morphine gr. ¼ at 11:30 p. m. and gave ether with the more severe contractions and complete anesthesia at delivery. Third stage of labor was normal, no lacerations, no hemorrhage. The patient has had an uneventful puerperium.

This case only illustrates the kindness of Mother Nature, the faith of a "country Doctor" delivering the patient in the home and the successful outcome, whereas if she had returned to the well equipped city hospital with an obstetrical specialist in attendance, she would have been subjected to a caesarian section because we believe that myomectomy during pregnancy leaves a weak scar in the uterine wall.

For an exhausted study of fibromyomata and pregnancy the reader is referred to the article of Dr. Richard N. Pierson—a study of 250 cases from 35,836 admissions to the Sloane Hospital to January, 1925, as it appears in the American Journal of Obstetrics and Gynecology, 1927, pages 333-344. A statistical study has been made of the following topics:

1. Incidence of fibromyomata noted during pregnancy 0.8 per cent.
2. Spontaneous abortion and premature labor—24.1 per cent.
3. Effect of fibromyomata upon the course of pregnancy and labor.
4. Pelvic fibromyomata; treatment and sequelae for mother and baby.
5. Cases in which operative interference during pregnancy, labor or the puerperium, was thought necessary because of the fibromyomata themselves.

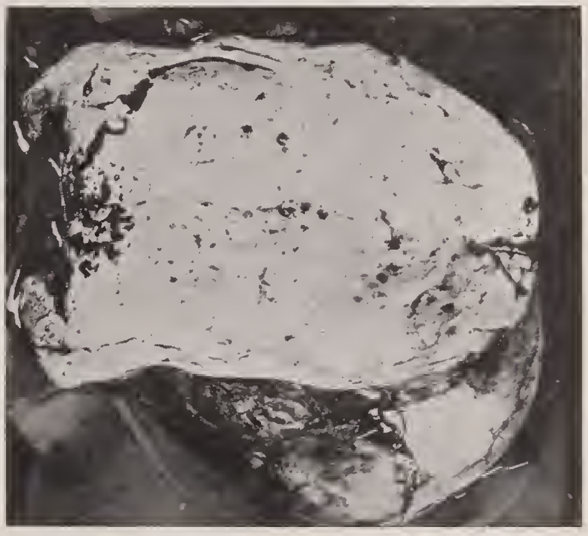
Fig. 4. Cut surface of fibroid—no areas of degeneration nor malignant changes.

6. Maternal mortality 3.2 per cent.
7. Foetal mortality 35.6 per cent.

SUMMARY AND CONCLUSIONS

1. The incidence of clinically important fibromyomata, 191 in 30,836 consecutive pregnancies, was 0.6 per cent, of which 15 per cent were in the pelvis.

2. Spontaneous abortion or premature labor occurred in 24.1 per cent of the cases.

3. The incidence of important obstetric abnormalities and complications is markedly increased by fibromyomata.

4. Major operative interference was necessary because of the fibromyomata in 21.3 per cent of the 191 cases (42 of 191). It was necessary in 73 per cent of the 30 pelvic cases.

5. The gross maternal mortality was 3.2 per cent (8 or 250). The mortality due to obstetric causes was 2.08 per cent.

6. The gross foetal mortality was 35.6 per cent (64 of 193). The mortality for cases in which fibromyomata were probably responsible was 20.8 per cent. Prematurity was the chief cause of foetal death.

7. The literature does not sufficiently emphasize the danger of fibromyomata to mother and baby, particularly to the latter.

8. During pregnancy special effort should be made to prevent abortion and premature labor. Interference is indicated only by the appearance of severe symptoms of pain, bleeding, or pressure, which do not yield to treatment. At term a test of labor is often desirable.

During labor if obstruction from the tumor persists, or other varieties of dystocia are marked, caesarian section should be done with myomectomy or hysterectomy, according to the indications. The third stage of labor requires particular attention to prevent hemorrhage from a poorly contracting uterus.

In the puerperium, fibromyomata may undergo degeneration and necrosis. They may slough into the uterine cavity and become infected. Where signs and symptoms point to the tumor itself as being primarily affected, radical surgery is indicated. Where, however, the tumors are simply included in a general morbid process (such as an acute uterine infection) radical interference is not so clearly indicated.

Two other references are likewise incorporated, showing the experiences of a French and English obstetrician, with myomectomy during pregnancy.

MYOMECTOMY DURING THE PUERPERAL STATE

Placintianu, G.: Rev. franc. de gnec. et d'obst. 22: 421, 1927. Abstracted by Dr. J. P. Greenhill.

The author reports a series of 56 cases in which myomectomy was performed by various operators during pregnancy and in 41 cases the latter continued after the operation. He also reports five cases in which myomectomy was done after emptying the uterus by caesarian section and four cases in which this operation was resorted to during the puerperium. His conclusions are as follows: Surgical intervention is seldom necessary during pregnancy and when indicated, myomectomy can frequenty be done in the early months of gestation without interfering with the further evolution of the ovum. During the latter months of pregnancy, operation is rarely necessary. During labor the chief indication is a fibroid blocking the pelvis and enucleation can be performed after caesarian section. During the puerperium, an operation may be made imperative because of hemorrhage and pain. A hysterectomy is to be performed at the end of pregnancy if there are multiple fibroids, or incarcerated ones, during labor if the tumors are multiple and during the puerperium if infection is feared.

Vandescal, R.: British M. J., 2, 793, 1928. Abstracted by Dr. Adair Hesdorfer.

In general myomectomy during pregnancy is contraindicated because it leaves a weak scar in the uterine wall.

Myomectomy is permissible in the following conditions:

1. When the fibroid is large and diagnosed early (before the third month) and when the tumor can be differentiated from the uterus.
2. At any time when necrobiosis of the tumor is demonstrable by such symptoms as pain, softening of the tumor or peritoneal irritation.
3. When there is a torsion of the pedicle with peritoneal irritation.
4. When there is a retroversion due to the tumor.
5. When pressure by tumor leads to hydronephrosis, venous stasis, etc.

The following technic is advised for operations:

1. General anesthesia is preferable.
2. Decapsulate the tumor by an incision around its summit and not around the base.
3. Stop all bleeding carefully.
4. Use no drainage.
5. Give morphine in large doses.

In following the above conditions the clinic has had 1.9 per cent maternal and 13.0 per cent fetal mortality.

WE BELIEVE THIS ONE

A Scotchman lay dying in a London hospital, and the doctor told the nurse to give him anything he wanted. She asked him what he would like, and he said:

"I wad like to hear the bagpipes afore I dee."

A piper visited the ward and played a tune. The Scotchman recovered, but all the other patients died.

PRECIPITATION OF ACUTE THYROIDAL SYMPTOMS BY OPERATION ELSEWHERE IN THE BODY

MAX EMMERT, M. D.,
Omaha, Nebraska.

A very illuminating article in the December, 1931, volume of Surgery, Gynecology and Obstetrics, by Plummer and Mayo, calls attention to the effect produced upon a mildly active goitre by operation performed upon some other organ in the body. Their conclusion of the relationship of cause and effect is aptly stated as follows:

"This review has strengthened the impression we have had for many years, that in cases of exophthamic goitre or hyperthyroidism from adenomatous goitre, in which the onset of symptoms was attributed to acute infection, nervous shock or operation, a critical review of the histories usually will indicate that the disease was present before the acute infection, nervous shock or operation."

The following described case in my experience seems to confirm their conclusions:

Mr. C. L., a farmer aged 50, had been under observation of one of the leading internists of Omaha for some time and was referred March 12, 1930, for cholecystectomy. He gave the following history: P. H.: Ten years ago he had suffered from influenza. No apparent sequelae. Has had bad teeth for years.

P. I.: About three years ago he consulted his local physician because of "pain in the stomach." Since then has had numerous attacks of pain in the upper right abdomen radiating to the right back and occurring most frequently in the evening. Has never been jaundiced. For a period of six months was free from pain but recently the attacks have become more frequent. There has been little headache or dizziness. No food selection. Considerable bloating after meals and eructation of gas. Bowels do not require cathartics but feces firm. Color varies from light yellow to dark brown. Has lost 25 pounds in three years.

Note: Apart from the loss of weight there is nothing suggestive of thyroid in this history.

Examination revealed a well nourished sparely built man. Color good. Eyes negative. Throat: Small atrophic quiescent tonsils. Few remaining teeth. Gums healthy. Small adenamatous thyroid. Thorax-lungs clear. Heart negative. BP 130/80.

Abdomen—Gastric gas. Marked spasm right rectus. Very tender over gallbladder and appendix especially in lateral position. Liver not appreciably enlarged or tender. Rectal—Moderately enlarged firm prostate. Reflexes normal. Urine negative.

Blood—Hb 87%; RBC 5200000; WBC 5000; N. 60%; SM 27%; L. M. 13%.

Pulse on admission to hospital 76, at 8 p. m.—100. Following days, 8 a. m.—Pulse 88; 12 N.—100; 4 p. m.—100; 8 p. m.—98. Day of operation, 8 a. m.—94.

Operation revealed adhesions between the liver and parietal peritoneum. The liver was grayish blue in color. The gallbladder was thickened and white in color and contained one calculus size of a robin's egg. Appendix retrocccal and atrophic type. The gallbladder and appendix were removed and the abdomen closed without drainage. At noon following operation the pulse was 140, at 4 p. m. 106, at 8 p. m. 132, at midnight 150. The abdomen remained flat. There was no vomiting or other indications of abdominal complications.

The pulse reached 90 on the 4th P. O. day and varied between 60-100 until his discharge from the hospital on the 11th day. Prior to his discharge his B. M. T. was plus—25.

Post operative notes:

April 30, 1930—P 96—BP 120/70—B. M. T. plus—24; wt. 128.

Fine tremor fingers—gained 10 pounds since operation.

June 3, 1930—P 96—BP 140/70—B. M. T. plus—33.

July 2, 1930—P 100—BP 140/75—Wt. 139.

October 30, 1930—P 96—BP 165/80—B. M. T. plus—60.

Because of the increasing thyroidal signs the thyroid was treated surgically November 3, 1930. Patient made an uneventful recovery and has remained well.

This timely article by Plummer and Mayo proves the necessity for thorough examination of an enlarged thyroid even in the absence of symptoms when contemplating surgery elsewhere in the body. The baso-metabolism test, while not 100% accurate, is the best single method we have at the present time to indicate the activity of the thyroid gland.

PERFORATION OF THE UTERUS IN ATTEMPTED SELF-INDUCED ABORTION*

C. H. WATERS, B. S., M. D., F. A. C. S.,
Omaha, Nebraska.

Mrs. Wm. D., age 27, 2 Para.

The patient, referred by Doctor George Pritchard, complained of fever, chills and pain in the lower abdomen. In the fear of pregnancy, having missed her last period late in November, 1931, she made three attempts to interrupt pregnancy by introducing slippery elm tents into the uterus. Each introduction of the tent was followed by a slight and, from her standpoint, unsatisfactory amount of bloody discharge. However, from the second attempt, on or about December 1st, she began to have pain of a constant though dull character in her lower abdomen, felt ill with temperature and recurring chills.

When the patient was first seen on December 13, 1931, she had a temperature of 102 and a well defined and very tender mass in the lower abdomen slightly favoring the left side. Bi-manual examination showed the mass to be behind and to the left of the uterus, the latter normal in size but deflected to the right and forward and fixed in position. There was a moderate sanguino-purulent discharge from the cervix. On admission to the Immanuel Hospital, the W. B. C. count was 18,000.

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*From the Surgical and Gynecological Service, College of Medicine, University of Nebraska.

The diagnosis of pelvic abscess resulting from perforation of the uterus seemed most reasonable although tubal and peri-tubal inflammation or an infected tubal pregnancy were considered as possibilities. At operation, performed that day under spinal anesthesia, an abscess well walled off and containing approximately a pint of pus was formed in the left side of the pelvis. The uterus was pushed forward and to the right. Both tubes and ovaries and the appendix were found normal. The uterus, forming much of the anterior wall of the abscess cavity, was carefully inspected for the site of probable perforation. In the presence of the irregular granulating surface, the site could not be definitely determined without injudicious probing.

Culture from the abscess showed colon bacilli and staphylococci.

Suprapubic drainage was followed by an uneventful and surprisingly short convalescence.

COMMENT

I rather doubt that pregnancy existed in this instance as our patient's frenzied efforts were unproductive in that no semblance of the products of gestation were passed, and, furthermore, the appearance and size of the uterus were not suggestive of recent pregnancy. Naturally, the final diagnosis of perforation is open to some question but it is a reasonable supposition when the method of attempted induction is considered. Furthermore, it seems highly improbable that the abscess resulted from an ascending infection inasmuch as both tubes were normal and uninvolved in the inflammatory mass.

URTICARIA SOLARE

L. J. OWEN, M. D.,
Lincoln, Nebr.

Patient, G. R., male, age 17 years.

Diagnosis. Acne, face and trunk, moderately severe. Nothing pertinent in past history.

Family history. Acne in one of parents.

The patient came in for treatment of his acne. On stripping patient and placing him near a window for examination, no lesions of skin were present except a wide spread and characteristic acne rash. His position was such that the sun could strike the skin and in a few minutes a distinct erythema appeared, to be followed shortly by profuse, raised and confluent urticarial wheals. There was but slight discomfort or itching. The patient had noticed that his skin "got red" quickly in the sun but it had never bothered him. There was no history of attacks of hives or itching due to foods.

At a later visit when the skin was again normal, an area of the back about 10 cm. square was exposed to a suberythema dose from an air cooled quartz lamp. The area promptly responded with the formation of an urticarial wheal. The face and hands were not sensitive and the boy carried on a normal life.

The skin responded normally to x-ray in clearing of the acne. Some weeks after beginning the x-ray treatment, the patient stated that the sun did not make his skin red as it used to do; and on placing him in the sun and ultra violet ray as had been done at his earlier visits at the office, I found his skin markedly less sensitive to the actinic rays.

Whether the x-ray had partially desensitized his skin I do not know, or it may have been a variable phase of reactivity often seen in sensitive skins. If the roentgen ray had acted to some what desensitize the skin, whether temporary or permanent cannot be told as I have not seen the patient since the clearing of his acne.

ADDISON'S DISEASE

Leonard G. Rowntree, Carl H. Greene, Rochester, Minn., and Wilbur W. Swingle and J. J. Pfiffner, Cold Spring Harbor, N. Y. (*Journal A. M. A.*, Jan. 24, 1931), discuss their results in the treatment of Addison's disease, with various suprarenal preparations. Fifty-seven patients have been subjected to the so-called Muirhead treatment. Thirty-two cases are reported as temporarily benefited, and in twenty of these the immediate results were excellent. In some cases this period of improvement lasted for weeks, in others for months, and in ten cases for periods of from three to seven years. In contrast to this, the treatment was entirely without beneficial effect in twenty-five cases. The latter patients usually did not tolerate the epinephrine well, complained of increasing weakness and trembling and of nausea and vomiting, and in these cases there was a lowering, rather than an increase, in blood pressure. In general, with the Muirhead treatment, half of the patients showed some benefit, a third responded with results that were considered excellent, and a sixth were living after three years. The results of the Muirhead treatment may well be likened to those of treatment with roentgen rays or radium in carcinoma. With the application of radium marked temporary improvement is common, and remissions last for weeks, months and occasionally for years. And just as radium is curative in many cases of carcinoma of the cervix, so the Muirhead treatment is effective in certain types of Addison's disease. Radium is regarded usually as palliative in carcinoma; the Muirhead treatment is also palliative, but like radium it may also closely approach a curative measure. Various other products, prepared from the suprarenal gland or closely related to epinephrine either in their chemical structure or pharmacologic action, have been tried in the treatment of Addison's disease, including ephedrine and the cortical hormone of Swingle and Pfiffner. The effect of this last named preparation was observed on six patients. The amount of cortical hormone available for clinical use has been small and its delivery irregular, so that as yet it has not been possible to make a complete clinical study. The results to date, however. warrant this preliminary report. Their results convince the authors of the efficacy of this cortical hormone. The disappearance of anorexia, the increase of appetite to the point of hunger, the gain in weight, and the difinite euphoria were striking in all cases. As long as the preparation could be administered, the results were all that could be desired. However, the supply of the preparation has been extremely meager and intermittent, so that it has not been possible to observe the results following consistent dosage and continued administration. Moreover, the first preparation used was not free from epinephrine and was irritating locally. The later supply, however, was almost, if not wholly, free from epinephrine, was suitable for intravenous administration, and was much less irritating when injected subcutaneously. Under ordinary conditions, the intravenous method of administration would seem to be preferable. The usual dose is from 10 to 20 cc. daily in divided doses, but 20 cc. has been given to a patient at one time without any undesirable reaction, and as much as 100 cc. has been given intravenously to dogs without any untoward effects. The immediate results in a crises are excellent. The disease, however, is chronic, and it will be necessary for several years to elapse before a final appraisal can be made of the value of this cortical hormone in Addison's disease. The first three patients had previously been under the Muirhead treatment and all three stated that they felt better when this cortical hormone was given than with any treatment which they had received before. The return of appetite and the increase in weight have been the most striking effects witnessed by the authors in their entire experience with this disease. They are inclined to believe that the cortical hormone is as effective in meeting the crisis of Addison's disease as is insulin in diabetic coma. Although somewhat less prompt and dramatic in action, the results are almost equally striking. With unlimited supply of the hormone, it is possible that patients may be completely rehabilitated.

CEREBRAL SPASTIC PARALYSIS IN CHILDREN

To improve the physical and mental handicaps of children with cerebral spastic paralysis, Edwin Warner Ryerson, Chicago (*Journal A. M. A.*, Jan. 2, 1932), gives three methods of attack: education, physical therapy and surgery. All three of these must be utilized in support of one another. The milder cases, with only slight spasticity and loss of muscular control, can be much improved by the judicious lengthening of the tendons of such muscles as the hamstrings, the adductors of the thighs, and the large calf muscles. It is important to avoid too much lengthening, especially of the achilles tendons, for an opposite deformity may readily be caused and may be more disabling than the original condition. After such plastic operations, the educational training is continued and the affected muscles are massaged and stretched daily. The voluntary cooperation of the child is perhaps the most important factor and must be stimulated and encouraged in every possible way. It is here that the skilled physical therapeutist affords the greatest aid, and her services are invaluable in originating and devising methods of enlisting the child's interest. Group training is very useful in providing imitative competition and regular routine. These children, as a rule, do better in classes than when individually treated at home. The severer cases require more radical surgery. The author believes that operative procedures are beneficial in a large proportion of all victims of spastic paralysis of the severer type and that the more conservative measures are preferable to the more radical.

EXPERIENCES WITH PERIARTERIAL SYMPATHECTOMY IN FRACTURES OF LOWER EXTREMITY

Ralps Colp and Sigmund Mage, New York (*Journal A. M. A.*, Oct. 10, 1931), call attention to the fact that periarterial sympathectomy seems to have a physiologic basis for application in the problem of fracture repair. In a series of seven recent fractures of the lower extremity there was a diminution of time in obtaining clinical union of eleven days, and in hospitalization of nineteen days, and no case showed a tendency toward delayed union. In a series of ten cases of delayed union in fractures of the lower extremity which were ununited after an average of seventy days, clinical union resulted twenty-one days after sympathectomy in eight cases. The experimental and clinical evidence seems to justify a further trial of this operation in recent fractures and in those in which union appears to be delayed.

BOSSY'S EPITAPH

A farmer was trying hard to fill out a railway company claim sheet for a cow that had been killed on the track. He came down to the last item: "Disposition of the carcass." After puzzling over the question for some time, he wrote: "Kind and gentle."

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INSURANCE AGAINST AUTO ACCIDENTS SHOULD BE PAYABLE TO HOSPITALS AND SURGEONS

The *Illinois Medical Journal* (Feb., 1932) discusses, editorially, the financial aspects of automobile accidents as they affect hospitals and the medical profession. It is estimated that the hospital bills for highway accidents in 1931 was $24,000,000, of which amount 40% is uncollectable. It is estimated that an amount equal to the hospital bills is the value of the service rendered by the medical and surgical profession and that the loss therefrom is equal to the loss sustained by the hospital, totalling, therefore, in the case of hospitals and the medical profession approximately $25,000,000 annually.

In 1920 the deaths from automobile accidents in the United States were 12,500; in 1930 the number was 33,000, and in 1931 the number was somewhat higher. In ten years there have been at least 8,500,000 disabilities from the same cause. A survey shows that 4.3% of patients treated in hospital in 1929 were auto accidents.

Quoting: "The hospital will save his life and will do the job thoroughly if it can be done with x-rays, laboratory work, service of all sorts, shelter, food, laundry, care and staff medical service. Or if the patient is not hospitalized some private practitioner takes charge and sees the man through. But more than one doctor sees himself forgotten if the patient recovers and very much out of luck and out of pocket if the patient died. More than one hospital has seen a patient who has been well served and tended walk out carelessly enough with bill unpaid and insurance damages in his pocket."

"Either more drastic and penalizing legislation fixing rehabilitation expense for the victim of the highway accident directly upon those who have caused the injuries, and in such a way that the liability shall be unquestioned, or some definite policy for reimbursement from other sources and without added burden to the taxpayer should be devised in some equitable and competent manner. The community sooner or later has its hands full in the after care of the victims of these accidents and their families, in those instances where the disability is such as to prevent anything but partial return to the former skill as a wage earner with the resultant breaking up of homes and increase of state dependents and semi-dependents.

"Ridiculous when we think of the machinery set up for workmen's compensation and then realize that there are more automobile accidents than industrial accidents and no effect made to correct this condition.

"Some plan of ways and means should be devised so that the community other than the hospital and the physician shall carry the economic hazard of highway accidents."

A MEDICAL EDITOR LOOKS AT THE IOWA MEETING

The editor of this *Journal* carried greetings from the Nebraska State Medical Association to the Iowa State Medical Society in annual meeting at Sioux City, May 4-6, and took observations of their men and methods.

The Iowa society has a membership slightly above 2000 as against our 1200. The attendance at Sioux City exceeded 500 and it was stated that a meeting held at its most central place, Des Moines, would bring the attendance nearer 700.

Looking over the multitude in attendance one was impressed with the idea that Iowa has a larger proportion of elder men in the profession than Nebraska.

A Scientific Exhibit of 17 items was a feature of the meeting and attracted a great deal of attention.

A very interesting program was presented. The several parts in the program were time-scheduled and it was interesting to note how closely the schedule was followed. No discussions from the floor were called for, but several papers had scheduled discussions. It may be open to question whether open discussions are the more desirable after each paper; but the method used at this meeting worked.

The writer was again forcibly impressed with the thought that physicians should have special training in public speaking. Most of the essayists apparently read to themselves only, for they could not be heard twenty feet away. Nebraska has some of the same kind.

The second afternoon was given over to a symposium on the cancer problem and Dr. Dean Lewis gave the first paper and presented a lot of interesting slides.

A pathetic feature of the meeting was that the incoming president reached Sioux City ill, was taken to a hospital, developed pneumonia and died within 24 hours of the close of the meeting.

Dr. Emma Ackerman, Sioux City physician, was elected president of the state society of Iowa Medical Women. She was a West Point, Nebraska, girl.

ECHOES OF THE NEW ORLEANS MEETING

The American Medical Association meeting at New Orleans two weeks ago, according to reports, was one full of scientific and local interest for those who attended. New Orleans is a quaint, historic city with many attractions.

The attendance, 2,752, must have been a disappointment, but may be accounted for by present economic conditions and distance from the geographic center of the states.

Secretary West reported a membership of 99,470.

The House of Delegates is reported to have decided (wisely, we think) against undertaking investigation of the matter of Birth Control.

A study of the use of infantile paralysis convalescent serum seems to show that as many recover without the serum as recover after its use.

Dr. Dean Lewis, Baltimore, professor of surgery, John Hopkins Medical School, was elected President-Elect and Milwaukee was chosen for the 1933 meeting place.

A partial list of Nebraskans in attendance is given below:

Bailey, B. F., Lincoln.
Fouts, R. W., Omaha.
Hays, Edward R., Falls City.
Henske, Jos. A., Omaha.
Lord, John P., Omaha.
Mitchell, A. R., Lincoln.
MacQuiddy, E. L., Omaha.
Ulmer, Walter P., Dawson.
Woodward, James M., Lincoln.
Hamilton, Howard B., Omaha.
Davis, Edwin G. Omaha.
Arnold, Chas. H., Lincoln.
Wherry, W. P., Omaha.

LEST WE FORGET HOSPITALS ARE BUILT FOR SERVICE FOR RICH AND POOR ALIKE

All modern hospitals look well to the comfort and convenience of the well-to-do patient. Charitable institutions and the state are amazingly thoughtful of the chronic indigent. But the self-respecting man of negligible means is both snubbed and neglected by this worthy institution. He is sand between the upper and nether mill stone.

This deplorable fact has never been more glaringly noticeable than it is today. The attitude of these responsible for this seems to be that since he is not a charge of the county or state, he should be and is, classed with his wealthy neighbor, and must pay the same for services rendered. There is no noticeable attempt on the part of these hospital boards to make provision for the day laborer, the clerk on starvation salary, or the tenant of small farms. These men would like to pay their way, would like to save their self respect, meet all hospital bills *without* impoverishing themselves for life—and I say "for life" advisedly.

Let us consider the case of some young farmer. He is only a tenant. His wife is taken suddenly ill. She is advised by her physician that an operation is necessary—imperative. She is immediately taken to a hospital. My young friend is bewildered, he has never before been inside a hospital and knows as little of its demands as I of another world. He walks meekly behind some nurse, answers all questions vaguely and trusts to the doctor and his Lord. He is unaware that because of unbreakable rules of the institution (rules evidently as unchangeable as the laws of the Medes and Persians), he will be obliged to pay for every service at precisely the same rate as would his rich neighbor, that there is no noticeable flexibility in scale of prices, that hospitals are built—judging their cost—for the rich alone.

This tenant's worldly wealth consists of four work horses, three cows, two sows and litter of pigs. These last, when fattened will bring him, with luck, two dollars apiece. An awe inspiring sum if the litter numbers seven! But hardly enough to cover operating room expenses, to say nothing of medicines and dressings, anaesthetist's fee and so forth.

On the third day after the operation he is approached by some attache of the hospital with a bill covering all expenses to date. He finds that he has been charged as much—no more, no less—than is charged the richest man in his community. Naturally, he is appalled by the situation. He may have as much as ten dollars at his command—certainly not more—and turns bewildered to relatives as poor as himself. But they can neither give nor loan. Told that the money must be forthcoming, he visits his banker. He tells his story and signs on the dotted line—a mortgage which in effect enslaves him for life, and comes away with something over a hundred and fifty dollars in his pocket. Has any man a right to sell another into slavery for one hundred and fifty dollars? Has the fortunate the right to make capitol of the unfortunate?

There are several reasons why this situation is, to state it mildly, deplorable. First, because it tends to detract from the man's self respect. He has here-to-fore paid his way. But if victimized by the hospital, his hand full of live stock taken for the unpaid mortgage, he flounders hopelessly for a time and discouraged gives up the struggle.

Second, when soliciting subscriptions for a new hospital the promise is invariably made that there is to be a section of this new building set aside for the unfortunate—for charity. But it seems that these rooms seldom materialize, or if so, are used for patients who pay the usual rate. It seems to be forgotten, this promise of a well-cared-for charity ward.

I am more and more impressed with the need of good airy rooms to accommodate the man of small means. Rooms which may be had for two dollars a day—three dollars a day—no more. It could be managed even in these times. The family of the poor man would have the satisfaction of knowing they were neither bankrupt nor forever classed as charity, should they be forced to occupy one of these rooms for two or more weeks. They could say good-bye to their nurse and the woman behind the office desk with their chin in a normal position. They would carry with them their feeling of independence. And, it is a matter of history, that most indigents were once proud of independence but hopeless situations forced them into the lethargy of hopelessness. Once there they are lost, a burden of the struggling tax-payer. Self respect is a precious quality—one that may prevent so great a thing as revolution.

I happen to know that the price asked by hospitals for a few drops or a tablet or two of the most inexpensive of drugs is often outrageous. Robbery under a cloak of business. No hospital should be required, under even the most favorable conditions, to do more than pay its running expenses. Or, should there be a surplus—put away for leaner years, that the patient might benefit thereby. All hospitals should be free from any taint of commercialism. It should be (it's the only excuse for its existence) operated for the benefit of the afflicted. It's duty is care and restitution if possible, of the physically and mentally ill. (Sometimes I think it is one of the effective places for the stimulation and bolstering of the soul). A hospital should be the place, the patient's misfortunte the opportunity, and the hospital personnel the agency for convincing the average patient that Christianity still lives in the land. When a man is down is a poor time to stand over him and demand blood money.

The doctor attending this man knows he will not receive compensation for his services now—perhaps never, and as likely as not will not enter the case in his day book.

This then is my plea: Fit the price to the patient's purse. What other plan can ever be fair and just? Don't make a pauper of a man because he tries his best to be honest. Give him a chance.

A word concerning the atmosphere of the average hospital, especially the large one, may not be out of place here. Is it not possible to make this atmosphere a bit more friendly? Must one lose all identity there? Must he be struck cold on entering the office of the institution? I always feel like a criminal registering for a life sentence when I approach a hospital desk to "check in." A very dignified and extremely efficient appearing woman greets me distantly, oh very distantly, asks name, residence, race, color, previous condition of servitude, religion (which for the life of me I can't see is any of her business for I will behave the same whether Jew or Gentile), and many other superfluous questions. Is it not enough that I am suffering and want very much to be let alone—allowed to hurry to my room and lie down amid quiet? Cannot these questions—most of them, be asked of a relative or friend after I'm resting in my room? I always stand trembling like a sere and yellow leaf, expecting any moment to be given a blouse and skirt on which is stamped in red ink a number, a long number likely, like 20,886, or one equally as suggestive. And, it isn't so different after all. I'm to be patient in room No. 18, or some figure just as suggestive. If this is absolutely necessary for efficiency—in a hospital—not a penitentiary—then I'll submit. That is if you can convince me of the fact, not otherwise.

I realize that both the physician and the hospital is often, far too often, victimized by the dishonest patient. representing himself as unable to pay anything at all. This is deplorable. Still, there remains the worthy poor who should be given a chance. They have every right to ask that there be some arrangement made whereby they may find rooms in harmony with their purse. Can't it be done soon?

It is distasteful to every right thinking person that a hospital is a money making institution—or built with that idea in view. For, regardless of class, or financial rating, "A man's a man for a' that."

—Dora Bower Eckles, (M. D.), York.

RECOMMENDATIONS MADE FOR THE FUTURE OF PHARMACY

Close observers of the modern trend of prescribing secret formula drugs and the decay of prescription writing as an art have long mourned the modern tendency which can bode no good to the profession or to the patient. The doctor prescribes for these fancily-named preparations because it saves time rather than for any superior quality they may possess and the patient pays a price out of proportion to their intrinsic or therapeutic value.

It is interesting to note that the Sub-Committee for the Committee on the Cost of Medical Care has as a result of their survey promulgated the following recommendations:

1. Secret-formula drugs and medicines should be abolished through the compulsory disclosure on the label of the kind and quantity of medicinal ingredients. Those developing new and distinct preparations should be financially protected by appropriate privileges granted by a disinterested agency.

2. All manufacturers of drugs and medicines should be required to operate under annual licenses to be granted by the federal government upon the fulfillment of satisfactory conditions with regard to competency of personnel, equipment and sanitary surroundings, and standardization of finished products.

3. Agencies should be established to prepare and disseminate accurate information concerning the proper use of home remedies appropriate for self-medication with the aid of a committee of physicians and pharmacists of unquestioned reputation and standing. Universal and unnecessary use of self-prescribed medicine should be rigorously discouraged.

4. Professional knowledge of pharmacists should be used more adequately by reducing physicians' reliance on branded products; by permitting pharmacists to instruct drug store customers in proper use of medicines purchased for self-medication, but not to the extent of diagnosing ailments or recommending medicines; by the pharmacist distributing information dealing with medicines and hygiene prepared by health departments; and by supplying information to the public concerning physicians and hospitals on the basis of data provided by local medical or hospital associations.

A MINISTER LOOKS AT THE COUNTY PHYSICIAN PROBLEM

Some months ago the *Evening Telegraph* published the bids submitted by several physicians of the city for the care of the sick poor of the county for the year 1932. We were amazed when the contract was let on a basis of $12.00 a year and mileage of 10 cents. We could not understand how a physician could take care of the county poor as they should be cared for on such a small salary. Our curiosity was aroused and after making a few inquiries we decided that we were definitely against such an inhuman system of letting out a contract to heal the sick at a figure that no physician could afford to accept.

We are informed that the County Agent gets $2,500 a year to help the farmer raise good hogs and cattle. We have no criticism along this line but we do raise the question as to which is the more important: hogs or children; cattle or men and women, who often through no fault of their own, are sick and need a physician and no money to pay. We have no particular objection to any physician who may bid this work in, but we do want to register a vigorous protest against this vicious method of taking care of the sick and unfortunate of our county.

The statutes of the State of Nebraska do not require the county commissioners to let this work out by contract to the lowest bidder. It also provides for an annual salary up to $200 plus mileage and drugs. The county commissioners economize, save $188 a year at the expense of sick children, expectant mothers, and men and women who are sick and helpless. This is not only false economy, it is un-Christian economy.

In common with many others we favor lower taxes, but not at the expense of the sick and unfortunate. *The Nebraska State Medical Journal* has protested editorially on at least two occasions against this practice. In the January, 1932, issue the editor says:

"We notice at least one county in this state has called for sealed bids for the burial of the county poor which is a new one to this editor; but immediately following is a call for sealed bids for county physician and again we express the hope that no physician will enter a bid. Competitive bidding for the purpose of being allowed to care for the needy poor is derogatory to the profession and unsatisfactory from every point of view."

No physician can afford to give the county poor adequate treatment on the salary and mileage paid by Lincoln county. We suggest to the county commissioners that they abandon this moss-back method which has been abandoned by the most progressive counties of the state. We are not meddling in politics, we are pleading for the poor and the unfortunate who apparently have no one to plead their case.

—Chester E. Tulga, in North Platte Baptist.

DR. CHARLES C. SNOWDEN, FIFTY YEARS AT DAVENPORT, NEBR.*

The physicians of Thayer and adjoining counties paid homage at a complimentary dinner, April 21, 1932, to Dr. and Mrs. Charles C. Snowden, on the completion by the doctor of fifty years of practice, the entire period having been spent at Davenport. About thirty-five physicians and their ladies attended the dinner. Dr. E. W. Rowe, Lincoln; Dr. H. E. Potter, Fairbury and Dr. H. J. Newell, Alexandria, gave tributes to Dr. Snowden, his life work and the progress of medicine during the past half century.

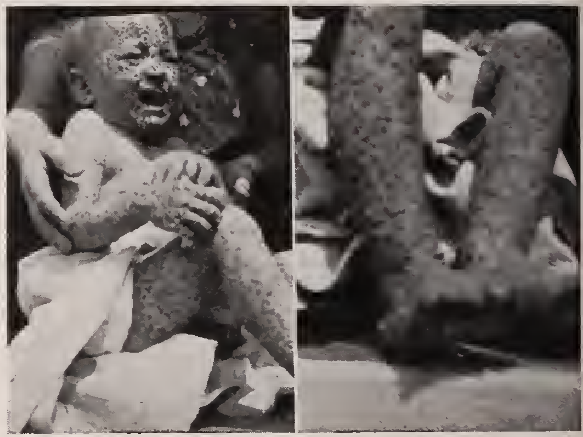
Dr. Charles C. Snowden was born February 18, 1854, at Saltsburg, Pa., and came to Nebraska in 1863. His father, Dr. I. Wayne Snowden, was a physician at Nebraska City from 1863 to 1870. Dr. C. C. Snowden attended the University of Nebraska 1871 to 1873. Graduated from Jefferson Medical College, 1882, and immediately located at Davenport, at a time when most of the farmers lived in sod houses, and has remained with the community all these years.

Dr. Snowden has traveled extensively over the United States.

Dr. Snowden has been a member of the Nebraska State Medical Association since 1882. He is the only charter member of the Thayer County Medical society left in the county.

Dr. and Mrs. Snowden have no children.

SEVERE SMALLPOX STILL OCCURS IN NEBRASKA



Two pictures taken by an outstate physician showing severe smallpox in a child.

OBSTETRICAL AND GYNECOLOGICAL HINTS. NO. IV

The contraindications for Internal Podalic Version may be briefly stated as:

1. Thinned out lower uterine segment.
2. Prolonged dry labor, particularly if contraction ring be present.
3. Tetanically contracted uterus.
4. Incompletely dilated cervix.
5. Contracted pelvis with disproportion.
6. Hydrocephalus.

—Harold S. Morgan, Lincoln.

DERMATOLOGIC HINT NO. IV

Erythematous, infiltrated eye lids, plus eruption on the face is usually eczema of exogenous origin. Search for and removal of possible irritants. Seborrhoea of the scalp may be the irritant.

—D. J. Wilson, Omaha.

Druggist: "How's your wife today?"

Customer: "Oh, she can't complain."

Druggist: "I didn't know she was as ill as that."

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*Dr. Snowden declined to furnish a picture for this article, explaining he had not had one taken for forty years.

EDITORIAL PARAGRAPHS

The International Congress on Biliary Disease meets at Vichy, France, September 19-22, 1932.

The birth of ten children to a mother at the same confinement is reported from Brazil. All died at birth.

The Committee on the Cost of Medical Care reports that approximately $125,000,000 annually is spent on healing cults in the United States.

In spite of repeated decisions by the Supreme Court on the matter of liability of counties for medical care of the indigent, physicians of Kimball county are compelled to sue for their just dues for recent services.

The United States Public Health Service reports that well over 10,000 cases of general paralysis treated with malaria have been reported and that these reports show that about twenty-five per cent have complete remissions and may be considered practically cured.

It looks as if the low point in *Journal* advertising had been passed. With the May number several of our former advertisers who had withdrawn their support earlier came back, notably Squibb and the S. M. A. people. One contracted for more space and one for preferred space.

Dr. W. W. Anderson in the *South Carolina Medical Journal* reports that parents' serum will prevent measles in the majority of children when given early enough and in large enough amounts. Immunization was attempted on forty-one contacts. Of these 24 received complete immunization, while 12 had modified measles.

Every observing reader of this *Journal* must note and be proud of the mechanical and artistic execution of the magazine. It is but proper to state that much credit is due to our publisher and particularly to the nameless workers in the plant who take great pride in the appearance of every number. They are ever ready to work out any crude suggestion the editor may have and are always helpful in numerous ways.

The vacation season is approaching and those piscatorially inclined will begin to think of the northern lakes, of bass, perch, wall-eyed pike, great northern pike and muscalonge. We are privileged to state that sportsmen interested in Muskies and the Lake of the Woods, desiring information from one who has repeatedly been there, may get such information by writing to Dr. J. J. Bruce, Madison, nationally known Muskie fisherman.

A Nebraska Child Health conference was held at Lincoln, April 14. The features discussed at the meeting included, schools and child health; public health work; the handicapped child; medical care of the child. The White House Conference was reviewed at the meeting. Prominent among those taking part in the meeting were Dr. P. H. Bartholomew, Dr. Hattie Plum Williams, Dr. E. R. Hays, Dr. F. W. Heagey, Dr. Harry Murphy and Dr. H. W. Schulte.

A Reprint of an article by Dr. Howard Updegraff, Hollywood, Calif. (former Omahan), on "The Cartilege Implant," offers the following summary: 1. Autogenic cartilage is much better than isogenic implants. 2. For facial reconstruction cartilage offers a superior medium to bone. 3. Reconstruction aided by casts, modeling clay and pithwood models offers an accurate basis for restoration. 4. Sufficient cartilage may be obtained from the nose, ears, ribs and ilium to supply the average demand.

A new method of bringing convalescent children back to health and strength, when for any reason they should not return to their own homes has been developed under the Speedwell plan in New York City. These children are placed in carefully selected foster-homes, preferably in the country. The foster-mother is paid from $5 to $7 per week and a quart of milk is furnished daily in addition and a nurse who is a member of the staff visits the home every day to see that everything is progressing well. A part-time physician is also subject to call.

An invitation has been extended to American physicians and surgeons by the Medical Association of Leningrad, Moscow and other cities of Soviet Russia, to visit their hospitals, clinics, research laboratories and similar institutions. This is the first occasion ever offered the American physicians to inspect officially these most interesting phases of Russian medical life. The group of American physicians which is now forming, will sail this summer. Those interested can get full information from Compass Tours, 55 West 42nd Street, New York City.

The regular Summer Clinics given by the Staff of Cook County Hospital under the auspices of the Chicago Medical Society will be held during the weeks of June 6th to June 28th, inclusive. As customary in time past, the usual $10.00 registration fee will be charged to cover the expense of organization. These clinics will be held during the time of the graduation exercises of the medical schools and will be a most convenient time for medical men to participate in the special activities of Alumni Week and also to attend the Post-Graduate Clinics at Cook County Hospital.

A Crippled Children's clinic sponsored jointly by the physicians of the Columbus area and the Elks, brought the registration to 143 when but about 75 were expected. All could not be examined and a deferred clinic is to be held shortly. These clinics are purely diagnostic and the patient is referred to his family physician for further care or direction with reference to further procedures. It is stated that about twelve per cent only of those seen at such clinics can be helped by any method. A similar clinic was scheduled for May 19 for the Kearney area comprising nine counties. Another to comprise thirteen counties in north Nebraska is to be given at Norfolk, June 9.

With 20 to 30 per cent of the sick in the United States not at present receiving adequate medical care, some form of compulsory health insurance is almost certain to be adopted to care for these people, according to A. M. Simons and Dr. Nathan Sinai who have just concluded a two-year investigation of the situation in this country and abroad. Their report is being published today in book form by the University of Chicago Press under the title, "The Way of Health Insurance." "Health insurance," they state, "is neither a panacea for all preventive and public-health problems, nor the bureaucratic state medicine so abhorrent to the other extremists. Notwithstanding the many faults and deficiencies of the various systems, no country that has ever tried compulsory health insurance would be willing to go back to pre-insurance days, and notwithstanding their conflicts with its policies, there is practically no opposition in the medical professions of any insurance country to the principles of insurance.

NECROLOGY

W. G. Kemper, Manitowoc, Wis.; Rush Medical College, 1882; practitioner at Omaha from 1884 to 1889; in practice in Manitowoc over forty years; died of an infection April 8, 1932, aged about seventy-three years.

George W. Lambley, Ainsworth, Nebr.; native of Mercer county, Ill.; College of Physicians and Surgeons, Keokuk, 1883; in practice for two years in Illinois and one year in Iowa before coming to Brown county, Nebraska, where he was engaged in practice for a year at Meadville, and two years at Springview before locating in Ainsworth where he remained in practice until about fifteen years ago when he retired to engage in the raising of thoroughbred cattle and hogs; died May 16, 1932, following a cerebral hemorrhage, aged about seventy-one years.

Cyrus M. Easton, Davenport, Nebr.; Rush Medical College, Chicago, 1872; for many years located at Hebron, Nebr., retired about 15 years ago and moved to Davenport, Nebr.; a former member of the Thayer County and Nebraska State Medical Association; died in March, 1932, while on a visit with a daughter in Oklahoma, aged about 85.

Adam Herney, San Diego, Cal.; Ensworth Medical College, St. Joseph, Mo., 1893; for years located at Deshler, Nebr., and later at Petersburg, Nebr.; some years ago moved to California; died at San Diego, Cal., in March, 1932, of carcinoma of the liver; aged 62. Former member of the Thayer County and Nebraska State Medical Association.

AUXILIARY NOTES

The Cedar, Dakota, Dixon, Wayne and Thurston Counties Auxiliary met at the home of Mrs. Dorsey at Hartington on Monday, April 25th. The following officers were elected for the coming year: Mrs. Stuart H. Cook, Randolph, President; Mrs. W. R. Talboy, Newcastle, Vice-President; Mrs. J. C. Kildebeck, Emerson, Secretary-Treasurer. Mrs. Paul Siman of Wayne reported sale of 85 subscriptions to Hygeia for use in Wayne county schools.

New officers in Richardson county are Mrs. George W. Egermeyer, Shubert, President; Mrs. J. C. Gillespie, Falls City, Vice-President; Mrs. O. F. Lang, Falls City, Secretary-Treasurer.

In the March Bulletin letter of Mrs. Freeman, National President, is a paragraph containing a message Mrs. Freeman would like conveyed to all Auxiliary women. You will agree with its timely reasonableness:

"Records lead me to another thought in regard to Auxiliary reports in State Medical Journals. May I offer a suggestion? It's entirely proper to publish the names of new officers and committee chairmen, but it's distinctly disappointing to read only that Mrs. John Jones reported for the Public Health Committee and Mrs. Samuel Smith for Public Relations, and to find all the rest of the valuable space—that costs the Medical Society good hard cash—devoted to social trivialities. Can't we safely assume that Mrs. Thomas Townsend was a gracious hostess, that the ribbons matched the flowers, that there was no salt in the ice cream, and that piano, violin and voice were in tune? The State Journals are so generous in the space they give the Auxiliaries that I do feel that we ought to report the work planned and actually accomplished by Mrs. Jones and Mrs. Smith and their committees instead of stressing food, decorations and musical programs. Reports of committee work are bound to be full of helpful suggestions for other Auxiliaries, and in the last analysis we are organized for a serious purpose and are interested in each other's progress toward the goal."

The Organization and Public Relations achievements in Minnesota are worthy to be known and read by all Auxiliaries. A high percentage of Minnesota's counties are organized 100%. A fine item in the Public Relations report has to do with an essay contest on the subject of Tuberculosis. To the High School boys and girls in the state, the Minnesota Auxiliary gave two loving cups for essays on Tuberculosis. From the 173 essays received ten were selected as the best. The writers of these were brought to Minneapolis one at a time, and the essays were broadcast over WCCO. Much publicity was given the Auxiliary and this project through the Twin City papers. These essays were printed, widely read, and much discussed. While the Minnesota State Health Association and Tuberculosis Christmas Seal Groups co-operated, yet to the Auxiliary went the credit and the work of enlisting the co-operation of High Schools and the English teachers, and the students themselves.

Delaware holds first place in this month's news with a unique undertaking. This state boasts among its honored citizens Miss Emily F. Dissell, President of the Anti-Tuberculosis Society and originator of the Christmas seals. (Do you know that these seals are now eagerly sought by collectors, and that only one complete file of the twenty-five is in existence?). Mrs. Tomlinson, President of the Delaware Auxiliary and national Vice-President, conceived the brilliant idea of enlisting the Anti-Tuberculosis Society in the campaign for periodic health exomination, that goal dear to the medical heart, chief ally in the fight against the White Plague. A program for health examination is now in progress more thorough and intensive than any hitherto known. Beside the Auxiliary, it includes five other state organizations, and there have already been distributed 16 billboard posters; 12 "talkies"; 7 movies; 180 street car posters; to doctors 100 Koch's translations; to teachers, press and doctors 1,000 Koch's announcements; newspaper articles totaling 432 inches; 30 newspaper stories; 2 radio talks; 39 addresses by physicians and other qualified persons before schools and clubs; 27 special school periods; 617 personal letters; and 49,050 leaflets, "Go to your Doctor for Physical Examination." (Please note that phrase, "Go to **your** Doctor," the man who understands you and can best judge of your condition.) Distribution has been made through 45 channels—gas and electric bills, banks, theatres, movies, clubs, schools, libraries, the University, and various men's and women's organizations. The work is being done by the Anti-Tuberculosis Society, which also pays the bills, but the moving spirit is one of our most highly valued Auxiliary members, Mrs. Robert W. Tomlinson. This campaign ranks with the Minnesota High School Radio Contests as an ideal exponent of the method of working through other organizations, the Auxiliary suggesting and guiding the work as approved by the Medical Societies. Please page all public relations chairmen, Auxiliary and Medical Society alike!

—Mrs. Roy H. Whitham.

"DOC" BIXBY'S TRIBUTE TO THE EDITOR*

"I am glad of this chance to unburden my thought,
For that work is my very best hold,
And to write in the place of political rot,
A true story that's worth being told.
Fifty years have I toiled with the pencil and pen,
I have stood for the things I deemed right;
And my heart has been touched by the sorrows of men,
And made glad when they won in the fight.
For the same length of time has tonight's honored guest
Been as patient and plodding and strong,
And his labors have been most abuntantly blessed—
And we honor you now Dr. Long.

"Yes, you traveled these wilds over trails that were blind,
And you waded through drifts that were deep;
Oft you rode like the devil to salvage mankind,
And you went without victuals and sleep.
I can see you today as you looked when at first
I beheld your kind features at rest;
I can vision you patiently doing your worst,
Or when prudently doing your best.
The philosophers say that we all make mistakes—
No one living but sometimes does wrong;
As to medical practice, in getting the breaks,
You're an offspring of luck, Dr. Long.

"You have been a Samaritan all of the way,
You are said to have played a square game,
And a whole lot of people are living today
Who were mighty near dead when you came.
You have contacted people with all sorts of ills,
Whom you never have sought to deceive.
And your smile has been often more potent than pills,
As I think I may fairly believe.
Fifty years—I am glad to be with you tonight,
And to pencil this rapturous song;
You have won a great race, you have fought a good fight,
So God bless you! Man's friend, Dr. Long!

TUBERCULOSIS ABSTRACTS

Nothing has done more to formulate orderly conceptions out of the confusion of phthisis than Koch's discovery of the tubercle bacillus. To Laennec we owe our classified knowledge of the diverse pathological forms tuberculosis may take; to Virchow we pay tribute for his logical, mechanistic interpretation of tissue changes in disease; to numerous other workers we are indebted for valuable contributions to knowledge. But Koch gave us the Rosetta stone—the key which enables us to translate the life story of the White Plague. That was fifty years ago. Since that time ardent students have been laboring to decipher the details. We are confidently expecting the conquest of the old enemy. Koch's contribution, however, was more than the discovery of a germ. He also put precision into the new and still haphazard science of bacteriology. He invented apparatus, adapted methods of others, and established principles, which made of microbe hunting the exact science of bacteriology. To what qualities of this unpretentious doctor may we credit that achievement? Allen K. Krause, in his foreword to Pinner's recent translation of Koch's original announcement, attributes it to the homely quality of patience—patience exalted to genius.

THE GENIUS OF KOCH

Early in 1876 Koch was lured away from a country practice in the village of Wollstein to the University of Breslau, there to disclose the life history of the anthrax bacillus and to open up the study of bacteria, work with which, by Pasteur, was stirring the medical world. Five years later Koch found himself directing a new science at the Imperial Health Bureau in Berlin, fully euipped for research. Soon after the cause and nature of anthrax had been discovered, came the identification of the gonococcus, pneumonococcus and the typhoid bacillus. Smear-preparations, staining and plate-isolation methods had been devised. Ehrlich was experimenting with aniline dyes, and Koch had taken these over into bacteriology.

Koch began the search for the cause of tuberculosis in 1881. He stained known tuberculous tissue with methylene-blue and saw—nothing; at least no germs. But he "fortified" the stain with potash and then he saw within the background of tissue, certain fine blue streaks that he felt sure were "germs". That was the first step; counter-staining with Bismarck-brown was a mere detail to be worked out later.

The next step demanded the separation from the morbid tissue of the extrinsic blue streaks; that is, the isolation of the germ. Here he struck another snag. Cultivation on a solid medium was necessary. Gelatine, the good old stand-by for ordinary germs would not work. But Koch was an adapter, never hesitating to use methods of other men. Tyndall, a

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*"Doc" A. L. Bixby studied medicine at Rush Medical College in the late seventies, but the lure of literature called louder than medicine, so he drifted into newspaper work and for forty years has been columnist of the Lincoln State Journal under the heading of Daily Drift. He is the oldest columnist in the field. The poem above was read by him at the complimentary dinner given to Dr. F. A. Long, April 15, 1932.

British physicist, interested in the age-long controversy of spontaneous generation, had exposed surfaces of coagulated serum to high altitudes in the Alps in order to catch the minutest particles of living matter. There can be no doubt that when the gelatine medium failed him, Koch lost no time in "borrowing" Tyndall's medium. Again he met with success. Inoculated surfaces displayed minute points of roughening. With a platinum needle, he transferred a bit of the matter to a slide, made a smear, stained it and then saw the gracile blue rod-like forms, which he had so often before seen in tuberculous products. The continuance of the original pure culture by repeated transferrence to fresh media was easily accomplished and carried out far enough to satisfy the most severe critic.

But would these artificially cultured germs actually produce tuberculosis in animal tissues? To prove that was the third step. In his paper he described accurately and without unnecessary detail the procedures and results which proved the virulence and specific effect of those first tubercle bacilli. He cited his experiments on animals with such surety that no skeptic could further doubt. And finally he succeeded in finding again the identical tubercle bacilli in the artificially produced tubercles. The chain of evidence was complete.

KOCH'S PROOF IMPREGNABLE

Koch presented his first announcement before the Berlin Physiological Society on March 24, 1882. Why a physiological, rather than, say, a pathological society or an organization for infectious diseases or internal medicine?

The reason is known," says Krause. "It sprang from Virchow's attitude on phthisis and its nature. The dean of cellular pathology, and indeed of world medicine, was then in no mood to listen to proof that consumption, tuberculosis, scrofulosis, Perlsucht, were the product of essentially one and the same specific agent;—much less was he ready to lend a hand toward encouraging heresy aimed at dogma that, more than anyone on earth, he himself had formulated and imposed upon medical thought. For thirty years and more he had ingrained the latter with the duality of phthisis and the nonspecificity of consumption and tuberculosis, which must, according to him, be regarded as two separate, though commonly associated, morbid processes."

Koch spoke his piece under odd auspices. Every hearer speculated on what Virchow would say. But in Koch's impregnable argument he could find no flaw. The Chairman called for discussion. There was none. So spellbound was the audience that they even failed to applaud. For the first time in the history of the Society no one arose to offer at least a prefunctory comment.

The discovery of the tubercle bacillus marked the pinnacle of Koch's career. By adopting and adapting methods he had put into everyone's hands a method of simplicity and accuracy applicable to the search for the causes of infectious disease to no end. "Within a few years Koch had snatched the vast hidden world of bacteriology from the 'Chaos' to which hopeless Professor Cohn had once consigned them."

Scientific workers have marvelled at the enormous task Koch performed in so short a time. It was necessary for him to spend time in trial of his older standard methods before discarding them. Moreover, as we now know, the tubercle bacillus is one of the slowest-growing of bacteria. With an experience of years behind him Koch had never come across a germ that would not become visible to the naked eye within two or three days after the implantation of the material within the culture tube. At the end of the first week his inoculated tubes remained unchanged. Twenty days passed before there was the least sign of growth.

In its staining qualities, too, the tubercle bacillus is different from other bacilli known to Koch. He did not give up when the ordinary methods employed at that time failed but so modified the dye that it did penetrate the bacillus he was hunting for.

Was Koch a genius? Like Edison he was a persistent experimenter. An active imagination suggested the objective and by repeated trial and error he found the way. He never hesitated to use and adapt the methods of others. He was ingenious in inventing methods of his own. But primarily his was the genius of patient waiting. Though past experience gave him no justification for waiting, he persisted in his heart-breaking vigil and in waiting, won out.

The Aetiology of Tuberculosis—Doctor Robert Koch—Translation by B. and M. Pinner—Amer. Rev. of Tuberc.—March, 1932.

KOCH'S ORIGINAL PAPER TRANSLATED

Koch's original paper Die Aetiologie der Tuberkulose was published in German a few weeks after the historic meeting of the Physiological Society. The better-known paper under the same title did not appear until 1884 and this was a greatly expanded dissertation on the tubercle bacillus. The fiftieth anniversary of the discovery of the bacillus prompted Dr. and Mrs. Max Pinner to make an English translation of the original essay. This was published in the March, 1932, American Review of Tuberculosis, and, together with illustrations and a foreword by Allen K. Krause (from which the above abstracts have been derived) was reprinted in attractive booklet form. This booklet may be obtained through tuberculosis associations.

PRIVILEGED CLASS

"Doctors mustn't look gloomy."
Says one in the South.—
I presume he'll let dentists
Look down in the mouth.

—C. E. in the Boston Transcript.

MEN

God give us men! A time like this demands
Strong minds, great hearts, true faith, and ready hands,
Men whom the lust of office does not kill,
Men whom the spoils of office cannot buy,
Men who possess opinions, and a will,
Men who have honor, men who will not lie,
Men who can stand before a demagogue
And damn his treacherous flatteries without winking,
Pure men, sun-crowned, who live above the fog
In public duty and in private thinking.

—J. G. Holland.

MOTHER MINE

You nursed me through my infant years,
You loved me as a child,
You shared with me my hopes and fears,
With counsels good and mild,
And when my erring footsteps strayed,
How sad that heart of thine,
You loved me better than before,
Dear Mother, Mother mine.

—Anonymous.

SCHEDULE: POST GRADUATE COURSE
UNIVERSITY OF NEBRASKA
COLLEGE OF MEDICINE

June 6th through
June 11th, 1932

Medical
Amphitheater

Hr.	MONDAY June 6th	TUESDAY June 7th	WEDNESDAY June 8th	THURSDAY June 9th	FRIDAY June 10th	SATURDAY June 11th
8	Obstetrics Pre-Natal Care Dr. C. W. Pollard	Nephritis in Children Dr. Clyde Moore	Obstetrics: Version Dr. W. H. Taylor	Transfusions Dr. R. B. Eldredge	Post Partum Complications Dr. W. H. Taylor	Differential Diagnosis Blood Diseases Dr. H. B. Hamilton
9	Rickets Dr. J. H. Henske	Hemorrhage in Last Trimester of Pregnancy Dr. Earl Sage	Secondary Anemia Dr. H. B. Hamilton	Contracted Pelvis Dr. C. W. Pollard	Nephritis Dr. Clyde Moore	Cancer of Uterus Dr. C. H. Waters
10	Manikin Demonstration Dr. Lloyd Hoffman	Blood: General Considerations Dean C. W. M. Poynter	Demonstrations of Kieland Forceps Dr. Earl Sage	Pyelitis and Typhoid Dr. E. W. Bantin	Diseases Complicating Pregnancy Dr. Lloyd Hoffman	Malignant Endocarditis Dr. C. G. Weigand
11	Hemorrhagic Disease of the Newborn Dr. H. B. Hamilton	Manikin Demonstrations Dr. Charles Moon	Physiology of the Blood Dr. A. E. Guenther	Sepsis Dr. W. H. Taylor	Spasmophilia Dr. J. H. Henske	Diagnosis of Position of Fetus Dr. C. W. Pollard
1	Dispensary Obstetrics Dr. Moon Dr. Hoffman Dr. Anderson	Clinic Dr. E. W. Bantin	Ward Walk Gynecology Dr. W. H. Taylor	Dispensary Obstetrics Dr. Moon and Dr. Hoffman	Pediatrics Clinic Dr. H. M. Jahr	Dispensary Obstetrics
2	Anhydremia and Athrepsia Dr. George Clark	Pelvic Treatment Dr. R. J. Stearns	Nephritis Dr. Clyde Moore	Histology of the Blood Dr. J. S. Latta	Normal Labor Dr. Harley Anderson	Clinic Pediatrics Dr. R. B. Eldredge
3	Zondek Ascheim Test (Diagnosis of Pregnancy) Dr. H. Anderson	Hypo- and Hyper-Glycemia Dr. H. M. Jahr	Toxemia Dr. L. S. McGoogan	Acute Pelvis Dr. Lloyd Hoffman	Chemistry of the Blood Dr. S. Morgulis	Manikin Dr. C. Moon and Dr. Hoffman
4	Acidosis and Alkalosis Dr. C. F. Bantin	Pelvimetry Dr. Harley Anderson	Osteomyelitis and Suppurative Arthritis Dr. Weigand	Defences of the Blood Dr. J. T. Myers	Sterility Dr. Earl Sage	Clinic: Pediatrics Dr. George Clarke

7 P. M. Monday and Thursday Evening: Gynecology-Dispensary, Dr. R. J. Stearns

THE SOCIETIES

A regular meeting of the **Omaha-Douglas County Medical Society** was held April 12, President Pinto in the chair.

Dr. Roeder gave a case history of Malignancy in the region of the neck with extensive resection and recovery.

Dr. Roeder also spoke on "The Position of the Arms under General Anesthesia." He described and illustrated by slides an arrangement designed for holding the arms away from the body and described the benefits to be derived from the position of the arms.

This was discussed by Drs. Weinberg, Clarke and Keegan.

The next paper was presented by Dr. Manuel Grodinsky, his subject being "The Blood Sedimentation Test in General Surgery." This was illustrated by slides showing many charts in a long series of cases. The paper was discussed by Drs. Roeder, Hamilton and Weinberg.

—Abstr., The Bulletin.

The **Madison-Six County Medical Society** held the April meeting at the high school building at Pierce on the 26th. Dinner was served by a group of ladies in the home economics department to forty-seven physicians and their ladies. The program which was much appreciated is self-explanatory and is given without comment:

"Case Report—Pulmonary Anthrax," Dr. John H. Calvert, Pierce.

"Cardiospasm, with X-ray films, bougies and a demonstration of the technique of dilation on a patient," Dr. C. R. Kennedy, Omaha.

"Moving Pictures of a Trip Into Africa," Dr. James T. Maxwell, Omaha.

The **Madison Six-County Medical Society** May meeting was held at the Lutheran Church basement, West Point, on the 17th, forty-five physicians and ladies being present. Following a spring-chicken dinner the following program was given:

"Relationship of Paranasal Sinusitis to Systemic Disease," Dr. A. D. Dunn, Omaha.

Discussion opened by Dr. W. P. Wherry, Omaha.

Dr. Dunn stressed paranasal sinus infections as frequent foci of indefinite troubles such as neurasthenia, indefinite heart affections, and others. Radical sinus surgery is indicated in some cases; milder treatment suffices in many cases.

Dr. Wherry is confident that insufficient surgery is to blame for unsatisfactory results of which patients complain. Asthma due to paranasal sinus infection is relieved by the conjoint use of adrenalin and cocainization with flake cocain, of the nasopalatine nerve.

The spring meeting of the **Third Councilor District Medical Society** was held at Auburn, April 14, with the following program:

"Indications for the Simple Mastoid Operation," D. O. Bovenmeyer, M. D., Beatrice.

"The Modern Trend of Pediatrics," W. O. Colburn, M. D., Lincoln.

"Carcinoma of the Breast, Its Diagnosis and Treatment," Ira H. Lockwood, M. D., Kansas City.

Business meeting.

6:30 p. m., dinner at Hotel (50c).

Talk, "Public Health," P. H. Bartholomew, M. D., Lincoln.

"Gastro-intestinal Symptom Complexes," (Lantern), J. D. McCarthy, M. D., Omaha.

"Some Clinical Features of the Colon," (Lantern), R. Russell Best, M. D., Omaha.

The Thayer County Medical Society met in Davenport, April 21. 35 physicians and wives, from Thayer and neighboring counties, joined in paying homage to Dr. C. C. Snowden, Davenport, who completed fifty years in the active practice of medicine. Upon graduation from Jefferson Medical College in 1882, Dr. Snowden located at Davenport, where he has spent the entire fifty years in a very extensive practice.

Following a six o'clock dinner, Dr. H. J. Newell, Alexandria, spoke in behalf of the Thayer County Medical Society. Dr. H. E. Potter, Fairbury, Councilor of the Seventh District, spoke in behalf of the wider circle of friends. Dr. E. W. Rowe, Lincoln, in his address spoke of the advances in medicine during the last fifty years, of the romance in medicine, even today, and briefly reviewed the career of the discoverer of the x-ray, Prof. Roentgen. Dr. Miles J. Breuer, Lincoln, spoke on "Types of Anemia that do not Respond to Standard Methods of Treatment" and offered the theory that certain types of anemia, that do not respond to liver or to iron and copper therapy, may be due to some, as yet unexplained, deficient renal function.

Greetings from representatives of the neighboring counties and from three former members of the society and words of appreciation from Dr. and Mrs. Snowden brought to a close a most enjoyable evening.

—Rudolph F. Decker, Sec'y.

Twenty doctors attended the **Richardson County Medical Society** dinner February 19, at Hotel Weaver, Falls City. Following the dinner a program was given which consisted of two papers: "Increased Mortality Rate of Appendicitis," Dr. Aldis A. Johnson, Council Bluffs, Ia., and "Amoebic Dysentary," Dr. McMicken Hanchett, Council Bluffs.

Dr. J. T. Maxwell of Omaha entertained the **Dodge County Medical Society** and auxiliary with an illustrated talk on his hunting trip in Africa, April 25, following the regular monthly dinner in the Falcon room at Hotel Pathfinder, Fremont. The Omahan showed several reels of interesting pictures taken during his expedition as a big game hunter in Africa. Following Dr. Maxwell's talk, Dr. Buchanan read a paper on "Trigeminal Neuralgia."

The Lincoln County Medical Society entertained at a seven o'clock dinner, April 14, at the Yancey hotel, North Platte, dining room. Covers were laid for eighteen guests. A business session followed the dinner. Dr. R. W. Fouts, Omaha, was the main speaker of the evening. Dr. C. F. Heider gave a paper.

Dr. Frederick J. Langdon, of Omaha, gave a very instructive address at the meeting of the **Dawson County Medical Society** and **Ladies Auxiliary** held at the Cornland Hotel, Lexington, April 14. The evening's program was preceded by a seven o'clock dinner.

At a meeting held at McCook, April 28th, the various medical societies of Southwestern Nebraska amalgamated themselves into one society which was called the **Southwestern Nebraska Medical Association.** This society is comprised of seven counties in this corner of the state and will meet monthly in the various towns in the territory.

Dr. Geo. Hoffmeister of Imperial was selected president at the meeting. Vice-presidents from each o the six remaining counties were also elected. Dr Leininger of McCook was elected secretary-treasurer

At the next meeting which will be held in June prominent doctors from Omaha and Kansas City wil be secured as speakers.

The first quarterly meeting for the year of the **Five-County Medical Society** was held at Hartington, April 25. The program included a paper by Dr. Lucien Stark of Norfolk on "New Methods of Classification of Albuminuria," followed by a round table discussion of topics of interest to the profession, this proving to be of much interest.

A luncheon was served at the Gilson banquet parlors following the meeting.

The **Cheyenne-Kimball-Deuel County Medical Society** meeting was held at the home of Dr. Harris in Chappel, May 2nd.

The scientific program consisted of two splendid presentations: 1. "Diagnostic Problems in Kidney Lesions" by Dr. Chas. F. Heider, of North Platte, Nebr., illustrated with lantern slides of pyelograms. 2. "Cerebrospinal Meningitis in Children" with special reference to treatment and presentation of eight cases with only one mortality, by Dr. Edward Stevenson, of North Platte. Both papers were splendidly presented and were enthusiastically and profitably received by all present.

Dr. Harris was a gracious host and furnished both enjoyable entertainment and refreshments.

—A. R. Everett, Sec'y.

The May meeting of the **Otoe County Professional Society** was held at St. Mary's Hospital, Nebraska City, Monday evening, May 9.

Dr. Adolph Sachs of Omaha gave a very instructive and practical discussion on "Agranulocytosis." Short case reports were presented to illustrate various points.

Dr. Floyd Clarke gave a very interesting talk on "Pneumonia in Children." He spoke briefly on the important points in diagnosis but confined his remarks principally to the essentials of proper treatment.

—H. B. Morton, Sec'y.

HUMAN INTEREST TALES

Dr. Lloyd McNeill has located at Mead.

Dr. W. H. Pallett, Crete, was reported critically ill early in May.

Dr. L. N. Kunkel, formerly of Tobias, has located at Weeping Water.

Dr. Roland Tyson has become associated with Dr. J. M. Greene, Falls City.

Dr. L. M. Stearns, Kearney, spent two weeks on a tour of eastern hospitals.

Dr. J. J. Loomis, Lincoln, has recently suffered a severe attack of pneumonia.

Dr. B. M. Riley has been installed president of the Omaha-Douglas County Medical Society.

Dr. Robert Sands, Omaha, has been appointed captain in the national guard medical corps.

Dr. J. H. Hall, veteran physician of Plattsmouth, was reported ill in an Omaha hospital last month.

Dr. Gene D. Caldwell, McCook product, has received a two year fellowship in the Crile clinic, Cleveland.

Dr. Walter Benthack, Wayne, gave a talk to the local Kiwanians on "Civilization and Medicine," recently.

Dr. G. H. Gilmore, of Murray, after a six months' sojourn in and about San Diego, has resumed his practice.

Dr. H. Winnett Orr, Lincoln, has been elected a member of the International Society of Orthopedic Surgery.

Dr. Russell Best, Omaha, gave a travelogue of Europe, based on his travels several years ago, to the Continental club, recently.

The Woman's Auxiliary to the Douglas County Medical society sponsored a child health meeting in observation of National Child Health week, May 3.

Dr. G. J. Woodin, Grand Island, for several years a medical missionary, recently spoke on the life of the Chinese at the Methodist church at Cairo, Nebr.

Dr. J. E. Prest and wife, Trenton, were seriously and painfully injured near York in an auto collision resulting from loose gravel, while on their way to the funeral of a sister at Randolph.

Dr. C. B. Foltz, Omaha, who suffered severe injuries in November, 1930, while motoring in West Virginia, has just made a settlement with indemnity insurance companies amounting in total to about $50,000.

BOOKS RECEIVED

A MEDICAL FORMULARY, containing over two thousand prescriptions with indications for their use. By E. Quin Thornton, M. D., Assistant Professor of Materia Medica in Jefferson Medical College. Thirteenth Edition, thoroughly revised. Published 1932. Pocket size, 352 pages, limp binding. Price $2.50.

HUMAN STERILIZATION by J. H. Landman, Ph. D., J. D., J. S. D., The College of the City of New York. 8 mo., 341 pages, cloth cover. Published by the MacMillan Company, New York. Price $4.00.

PSYCHOLOGY AND PSYCHIATRY IN PEDIATRICS, THE PROBLEM; Report of the Subcommittee on Psychology and Psychiatry, Bronson Crothers. M. D., Chairman. 146 pages, 6 mo., cloth cover, The Century Co., New York, price $1.50.

THE STORY OF MEDICINE, from Medicine Man to Modern Physician, by Victor Robinson, M. D., professor of History of Medicine, Temple University School of Medicine, Philadelphia. 10 mo., 527 pages, cloth cover. Published by Albert & Charles Boni. New York, 1931. Price, $5.00.

BODY MECHANICS, EDUCATION AND PRACTICE; Report of the Subcommittee on Orthopedics and Body Mechanics, Robert B. Osgood, M. D., Chairman. 166 pages, 6 mo., cloth cover, The Century Co., New York, price $1.50.

VARICOSE VEINS, With Special Reference to the Injection Treatment by H. O. McPheeters, M. D., F. A. C. S., Octavo, 285 pages with 62 half tone and line engravings, Third Edition. Price $4.00. F. A. Davis Company, Philadelphia.

A TEXTBOOK OF LABORATORY DIAGNOSIS by Edwin E. Sogood, M. A., M. D., Assistant Professor of Medicine and Biochemistry, Director of Laboratories, University of Oregon School of Medicine, and Howard D. Haskins, M. D., Professor of Biochemistry, University of Oregon School of Medicine. Octavo, 475 pages. P. Blakiston's Son and Co., Philadelphia.

PSYLLIUM SEED: THE LATEST LAXATIVE, a Scientific Treatise, by Dr. J. F. Montague, Medical Director, Montague Hospital for Intestinal Ailments; late of University and Bellevue Hospital Medical College; Fellow American Medical Association; Fellow New York Academy of Science; Fellow New York Pathological Society; Sometime Fellow New York Academy of Medicine and American College of Surgeons. 170 pages, 8 mo., cloth cover. Published by Montague Hospital for Intestinal Ailments, New York City, 1932.

"The gum-chewing girl, and the cud-chewing cow,
Seem to resemble each other somehow,
Just what is the difference you will allow
Is the thoughtful expression on the face of the cow."

TREATMENT OF POLIOMYELITIS

John Ruhrah. Baltimore (*Journal A. M. A.*, Oct. 24, 1931). summarizes the treatment of poliiomyelitis thus: The early treatment should be by the injection of convalescent serum or that taken from patients who at some time have had the disease. Stocks of this serum should be kept on hand by health departments, hospitals and similar institutions. Divided into proper doses, placed in small bottles and dried, it keeps practically indefinitely, and all that is needed is to add sterile water to it to make up the required amount. During the febrile period all efforts at treatment should aim to make the patient as comfortable as possible, using the technic which would be applied to any acute infection. Rest is essential and the late results are best when that is insisted on, whether the case is mild or severe. The patient should be kept in bed as long as there is pain, but during this period it may be advisable to lift him to another bed or comfortable chair while the bed is aired or made. This change is often most grateful to the patient and if it can be done without undue pain or fatigue apparently does no harm. When the legs are affected the patient should be kept either in or on the bed for at least six months and longer in many cases. The treatment of poliomyelitis after the febrile period consists in rest, relief of pain, prevention of deformity, massage and exercise, which may be passive, assisted, voluntary, carried out under water, but always supervised. Failure to prevent deformities due to contraction of the muscles, tendons and fasciae is the greatest sin of omission. The contractions take place very quickly; a week or ten days' neglect may result in a foot drop which may cost the patient much pain and the physician much trouble. No patient with extensive paralysis escapes without contractions, but they should be kept at a minimum by care and treatment. If they occur they should be treated as early as severe pain permits.

OPERATION

An operation may mean one thing to a patient, another thing to the surgeon.

The doctor's little daughter opened the door to the caller.

"Is the doctor at home?" asked the latter.

"No, sir," said the child. "He's out at the moment performing an appendectomy."

The caller smiled.

"I say," he said, "that's a very big word for a little girl like you. Do you know what it means?"

The girl nodded.

"Oh, yes," came the reply. "It means $125."

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CONTENTS

Page

Indications For and Results Of the Surgical Treatment of Pulmonary Tuberculosis, Thos. J. Kinsella, M. D., F. A. C. S... 269

Mechanical Considerations of Inspiration During and Following Operations, C. A. Roeder, M. D. ... 275

Elks Crippled Children's Clinics, F. W. Buckley, M. D. ... 280

Anterior Poliomyelitis: Diagnosis, Prognosis, and Treatment, Floyd S. Clarke, M. D., F. A. C. P. ... 283

Spinal Anaesthesia, Grover C. Kirk, A. M., M. D., Sc. D., and Ralph D. Green, A. B., M. D. ... 286

Hemorrhoids, Their Treatment by Both Operative and Injection Methods, and the Results to be Expected Following Their Treatment, Louis E. Moon, M. D. ... 289

Diagnostic and Therapeutic Injection of the Sympathetic Nervous System, Walter D. Abbott, M. D. ... 293

Report of Delegate to A. M. A. Congress on Medical Education and Hospitals, J. Stanley Welch, M. D. ... 296

Early Surgeons and Surgical Operations in Nebraska, H. Winnett Orr, M. D. ... 300

Ruptured Aneurism of Abdominal Aorta Simulating Perforated Gastric Ulcer, E. A. Watson, M. D. ... 303

Editorial—

Page

"Medical Liberty" Propaganda ... 304

Some Observations on the Annual Meeting at Lincoln ... 304

Crippled Children's Free Clinics ... 305

Dr. Dean Lewis, President-Elect, American Medical Association ... 305

Nebraska Tuberculosis Association Meeting ... 305

Community Service ... 307

Nebraska Academy of Ophthalmology and Otolaryngology ... 307

Quality of Medical Services Deteriorate Under Compulsory Health Insurance 308

Dr. Carroll D. Evans, Columbus Surgeon, Honored: Fifty Years in Medicine ... 309

Dermatologic Hint No. V ... 310

Obstetrical and Gynecological Hints No. V ... 310

Editorial Paragraphs ... 310

Necrology ... 311

Installation of President of the Nebraska State Medical Association ... 312

Auxiliary Notes ... 313

Tuberculosis Abstracts ... 313

The Societies ... 314

Human Interest Tales ... 315

INDICATIONS FOR AND RESULTS OF THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS*

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PART I

The modern methods of the treatment of pulmonary tuberculosis represent rather a radical change from those in vogue even ten years ago. A more or less passive attitude providing symptomatic treatment only and allowing nature to take its course has been displaced by a policy of active interference in carefully selected cases with results which amply justify the change. It is not to be assumed, however, that methods of proven value in the past are to be discarded but rather must be utilized to the utmost and supplemented by those of more recent origin where indicated.

All conservative treatment of tuberculosis is based upon the fact that physiological rest for the diseased area favors the healing of the tuberculous process. It recognizes that the disease is a constitutional one with multiple foci frequently and that constitutional treatment to improve general resistance is paramount. Rarely, if ever, is it possible to surgically extirpate all of the tuberculous disease present in any given patient. Surgery, therefore, does not cure tuberculosis but merely removes local disease, helps to control symptoms, corrects mechanical defects, and otherwise aids the body in bringing about such a clinical result. This fact must be recognized and considered more strongly in the treatment of pulmonary disease than in almost any other system for here no attempt is made to remove morbid tissue but only to alter local physiological conditions. Intensive constitutional treatment must be utilized both before and after any surgical interference if the best results are to be obtained. Failure to do so may negate the value of an otherwise carefully planned and perfectly executed series of operations.

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*Presented before the Nebraska State Medical Association, annual meeting, Lincoln, May 24-26, 1932.

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The statement that all patients with active pulmonary tuberculosis should be given a varied period of intensive bed rest before collapse therapy is indicated is, I believe, quite true and very advisable ordinarily although there are definite exceptions, notably the occurrence of profuse or repeated pulmonary haemorrhage, marked toxemia or intractable cough which may warrant interference without preliminary constitutional treatment. Collapse therapy can be and not infrequently is undertaken without such preliminary preparation, but when so instituted, hurriedly and before the patient has had opportunity to mobilize his forces of resistance, extension or re-activation of disease in the contra-lateral lung occurs more commonly. Such enthusiasm for collapse therapy measures undoubedly subjects to surgical interference numerous individuals who were perfectly capable of handling their tuberculosis by themselves within reasonable time limits. This is particularly true in the patients with a limited soft exudative type of tuberculosis of recent origin with annular shadows visible on x-ray films, in whom, under a positive diagnosis of cavitation, established on insufficient evidence, collapse therapy is instituted at once and credit taken to the collapse measures for the high percentage of closure of cavity and negative sputum obtained. A surprisingly large number of annular shadows and positive sputa in this group disappear very promptly even within two or three months under a conservative regime without instituting collapse.

Excessive caution or undue timidity in recommending active interference in properly selected patients on the other hand may prove even more disastrous in that the patient's disease may progress and render him either relatively or absolutely unsuitable for any type of collapse therapy. The ideal program, then, should be one of intelligent conservatism supplemented by active interference where indicated, letting neither the ambitious surgeon nor the timorous physician dominate the picture. In no field of medicine can intelligent and willing cooperation between internist, phthisiotherapist, roentgenologist, laboratory worker and surgeon be utilized to greater advantage. Our plan should include intensive bed rest at the beginning in order to give the patient the proper start, to raise his general resistance and give him his own chance to heal his tuberculosis by his own efforts. If this is successful, then nothing further is needed except perseverance, for there are no shortcuts and no sixty-day cures for tuberculosis. If after a reasonable period of time the patient has not shown definite evidence of clearing his disease or if cavity is present, the case should be carefully reviewed to determine whether some additional type of treatment should be added to increase the patient's chances of obtaining good results. When deciding upon the type of procedure for any given patient, due consideration should be given to selecting the most conservative method which may produce results, carefully weighing the risks involved, the chances of possible complications and the economic and social circumstances of each individual patient.

All of our surgical methods of treating pulmonary tuberculosis depend for their effectiveness upon a mechanical immobilization of the lung with a reduction of physiological function, combined with a mechanical reduction in lung volume-compression. These two factors are inseparable. The resultant effect is a closure of cavity, a squeezing of secretions from the lung, control of bleeding vessels, a lymphatic and vascular stasis, the production of a compression atelectasis and an immobilization of the lung, which bring about a reduction in toxemia and a diminution in symptoms which greatly favor the healing of the tuberculous process. The surgical methods available for producing such effects may be roughly divided into three main groups: First, artificial pneumothorax and its supplementary procedures; second, operations upon the phrenic nerve, scalene muscles and intercostal nerves; third, extrapleural thoracoplasty and its various accessory and supplementary procedures. Each of these groups will be considered separately.

ARTIFICIAL PNEUMOTHORAX

Artificial pneumothorax is the type of treatment in which the involved lung is collapsed and compressed by the repeated insufflation of air into the pleural space through a needle inserted under local anesthesia through the interspace. The lung is thus slowly or rapidly forced away from the chest wall depending upon the design of the operator, reduced in volume and forced downward into a small mass toward the hilum. Its successful application depends upon the presence of free pleural space and the absence of strong or numerous adhesions which interfere with collapse of the involved area. It is the safest, most flexible and most widely adaptable and consequently the most valuable type of collapse therapy which we have available. The treatment is very simple and the risk extremely small. If it can be successfully established and there are no limiting adhesions to interfere with the compression, the lung may be collapsed as much as 90 percent and this collapse increased or decreased at will. As it is directly under the operator's control, it may be increased if symptoms, toxemia or haemorrhage so indicate, or decreased either by direct absorption of air by the patient or by aspiration in case additional breathing space is needed because of contra-lateral development of disease, pleural effusion, spontaneous pneumothorax or other emergencies. It presents the additional advantage of not being an irrevocable procedure as it is possible under certain circumstances to discontinue the pneumothorax, allowing the lung to completely re-expand and resume function. Because of its flexibility, it is our procedure of first choice and not only permits us to undertake collapse therapy in the face of acute exudative tuberculosis which is unsuitable for more radical measures, but it also enables us to establish collapse slowly and gradually on the more extensively involved side in bilateral disease with the least danger of precipitating an extension of the contro-lateral process and with the assurance that should an extensive contra-lateral spread develop, the pneumothorax may be reduced, discontinued, or even if necessary, be made bilateral. While it is predominantly a bedside procedure, and may upon occasion be instituted in the patient's home and carried on in the doctor's office, it is unquestionably safer to establish the pneumothorax in an institution where accurate x-ray and fluoroscopic control are available in order to regulate the amount of collapse obtained and to guide the operator in the frequency and size of his refills until the procedure becomes stabilized.

The successful establishment of an artificial pneumothorax is dependent upon the patency of the pleural cavity. While it is possible at times to forecast that the pleural cavity may be obliterated by adhesions because of a past history of pleural effusion, there is only one certain way to finally determine whether the given individual may take artificial pneumothorax or not and that is by repeated careful attempts to induce a collapse over various areas of the chest. A complete pneumothorax is possible only when there are no strong peripheral adhesions between parietal and visceral pleura. A successful pneumothorax is possible at times without complete collapse of the lung provided a sufficient compression is obtained over the involved areas to close cavities and control symptoms. This has been known to occur with a relatively small amount of air providing the collapse occurs directly over the symptom producing area. Unfortunately, adhesions between the visceral and parietal pleura are usually the result of pathology in the underlying tissues and hence are most likely to be found in the region of cavities or other symptom producing lesions, where they not infrequently interfere with adequate collapse.

Artificial pneumothorax, because of its safety, flexibility, ease of administration and lack of severe trauma to the patient, may be used in the following groups of cases which are relatively or absolutely unsuitable for the more radical collapse therapy measures, particularly extrapleural thoracoplasty. These include:

1. Patients with acute or pneumonic predominently unilateral tuberculosis.
2. Patients with exudative type of disease or exudative spread from a more chronic fibrotic lesion.
3. Patients during active profuse or repeated small pulmonary haemorrhage.
4. Patients with bilateral tuberculosis in whom there is a small or moderate amount of active disease in the relatively good lung.
5. Patients with more extensive bilateral pulmonary tuberculosis in whom bilateral collapse therapy is planned.
6. Patients with smaller amounts of disease, particularly in the upper portion of the lung, who have been unable to handle their disease under conservative treatment and in whom more radical or more permanent type of collapse is not advisable.
7. Patients who must be treated in the home.
8. Patients in the extremes of age or in whom because of organic cardiac, renal or other disease the more radical methods are contra-indicated.

In general, the indications may be stated to include the patient with extensive unilateral disease with cavitation or haemorrhage, or with less extensive disease uncontrolled by more conservative methods.

Pneumothorax, once established, should be continued for a considerable period of time, probably for several years at least, but this is dependent to a great extent upon the original involvement for which it was induced, the size and location of cavities and to a considerable degree also upon the patient's general resistance against tuberculosis. The necessity for repeated refilling with air to replace the gas absorbed into the blood stream from the pleural cavity, presents at times a direct social and economic contra-indication against the use of this type of treatment in patients of limited means or those whose home is in outlying districts where the facilities for treatment are not available. However, with the increasing use of this type of treatment, the establishment of state and county sanatoria, and clinics in outlying districts and the education of our physicians and medical students in the modern methods of handling pulmonary tuberculosis, this argument loses its weight. Pneumothorax refills which at first are given every few days, later may be spaced more widely until many patients reach a three or four week schedule and a few a longer interval.

There are a few possible complications of artificial pneumothorax which should not be overlooked. Air embolism which occurs only very infrequently is nevertheless of serious consequence when it does happen and precaution must be taken at all times to avoid injection of air into the lung parenchyma. Spontaneous pneumothorax may occur during the course of artificial pneumothorax treatment the same as in the tuberculous individual without therapeutic collapse. Accidental pneumothorax from trauma to the lung by the surgeon's needle happens more frequently than is usually recognized, particularly during the early course of the treatment. Pleurisy, the result of tuberculous involvement of the visceral pleura, is the second most frequent symptom occurring in pulmonary tuberculosis due to the local disease, cough being first. Because of the separation of visceral and parietal pleura from each other by the air blanket in artificial pneumothorax, effusions resulting from such pleurisy are of more frequent occurrence under treatment and are to be expected in at least 50 or 60 per cent of patients in any series. Although ordinarily not of serious moment, such serous collections may at times, because of the accompanying toxemia or the mass of the fluid present, seriously distress the patient and demand aspiration. Tuberculous empyema resulting from a more intensive pleural reaction from the same source, is encountered in 10 to 12 per cent of patients taking artificial pneumothorax, being more frequent in those with more extensive and exudative disease. It is not of such serious import as it was at one time considered. It may clear up under conservative treatment and aspiration as indicated, but its radical permanent cure may demand obliteration of the pleural space either by complete expansion of the lung or extrapleural thoracoplasty.

The results obtained from artificial pneumothorax treatment depend in a large measure upon the original tuberculous disease for which the collapse was instituted. It is frequently a lifesaving measure in the patient with profuse or repeated pulmonary hemorrhage, acute pneumonic tuberculosis or a very severe intractable cough. When successful, it frequently rids the patient of his distressing symptoms more rapidly than any other measures available and is a potent factor in reducing a given patient's chances of developing complications or extension of tuberculosis by relieving him of positive sputum as well as reducing the danger of infection to others from the same source. Eventual results are dependent upon the lesion present at the time the original pneumothorax was instituted as well as upon the success of the collapse obtainied and patient's general resistance. We may expect artificial pneumothorax to double or even treble a given patient's chances of recovery over those which he has to expect without the aid of collapse therapy measures. Certainly with advanced pulmonary tuberculosis this alone is sufficient to justify a wider application and more intensive use of this method of treatment.

INTRA-PLEURAL PNEUMOLYSIS

A large number of patients taking artificial pneumothorax present adhesions between visceral and parietal pleura which hold the lung out to the chest wall and prevent a complete collapse. Many of these adhesions will gradually stretch under careful increase of the pneumothorax without the use of undue pressure and permit a satisfactory clinical result with closure of cavity and control of symptoms. Gentle attempts at such stretching of adhesions are justifiable under careful accurate control, but radical attempt to increase collapse by the use of rapidly increasing high pressure is to be condemned as dangerous, because of the probability of rupture of the lung with subsequent contamination of the pleural cavity with tubercle and secondary organisms. There are a few patients, probably not over 5 per cent of those taking artificial pneumothorax who present rather elongated string or narrow band adhesions not containing lung tissue which do not stretch out under gentle increase of the pneumothorax and which mechanically hold out symptom producing areas or cavities. These may, with benefit to the patient, be sectioned without undue danger by the operation of intrapleural pneumolysis according to either the closed or open method.

By the closed method, usually referred to as the Jacobaeus technique, the adhesions are visualized through a thoracoscope inserted through the interspace under local anesthesia. The cautery blade or endotherm tip introduced through a separate cannula is then guided by indirect vision to contact with the chest wall end of these strings or bands where they are thoroughly coagulated and cut. The released lung may then collapse under increased pneumothorax. The open method which is attended by somewhat more risk but which at times may present certain advantages, exposes the adhesions through a small or wide intercostal or subcostal incision and permits clamping or ligating and sectioning of them under direct vision. The equipment necessary for the closed type of work is rather extensive and the field for the work sufficiently small so that only the larger institutions handling these patients can afford to install the necessary instruments. Some excellent clinical results have been obtained by this method and a number of otherwise unsatisfactory artificial pneumothoraces have been converted into clinically effective ones with closure of cavity and control of symptoms.

PHRENIC NERVE SURGERY

The second group of surgical procedures to be utilized in the treatment of pulmonary tuberculosis includes surgical efforts directly against the nerve supply to the diaphragm, the intercostal muscles and against the insertions of the scalene muscles into the first and second ribs. All of these are designed to produce an immobilization of the corresponding half of the chest by interfering with its muscular activity. Of these the phrenic nerve operations should be given first consideration.

Operations upon the phrenic nerve are done to induce a paralysis of the corresponding hemidiaphragm either temporarily or permanently, depending upon the design of the operator. A temporary interruption of the phrenic nerve may be obtained by freezing, crushing, alcohol injection, or a simple section and suture of the trunk following which we may expect in the majority of instances, a return of function in approximately five to six months. The methods most frequently employed are crushing and section and suture. Alcohol injections are to be avoided because of the danger of producing a brachial neuritis. The successful immobilization of the diaphragm by any of these methods requires the simultaneous interruption of all accessory phrenic branches which occur in at least 30 per cent of patients. A permanent interruption of phrenic nerve function may be obtained either by excision of a centimeter or two of the main trunk with a corresponding amount of all accessory branches, or an avulsion of the distal segment of the main trunk which, if a sufficient segment is obtained (10 or 12 centimeters as a rule) breaks off the accessories that join the main trunk above this point. The paralyzed diaphragm in the absence of limiting costophrenic adhesions, rises into the thoracic cage to a variable degree, depending upon the difference between intra-thoracic and intra-abdominal pressure. Active motion ceases and is replaced by a corresponding degree of paradoxical motion more evident on deeper breathing. Reduction in lung volume probably does not exceed 30 per cent at the most. The immobilization produced is relative rather than absolute. Clinically this paralysis is evidenced by a diminution of breath-sounds over the side, an indication of the immobilization which is occurring in the lung, the effect of which apparently occurs throughout the lung rather than in the basal portion only; by at times relieving cough, helping to control hemorrhage and facilitating the raising of sputum. Occasionally untoward symptoms occur, particularly following left sided operations with discomfort due to gas accumulation in the stomach and splenic flexure and due to loss or diminution of the expulsive forces of the abdomen.

Technically in the hands of surgeons familiar with the anatomy of this region, the operation is usually a relatively simple one easily performed under local anesthesia and followed by no particular reaction from the patient. It may be performed even in the patient who is desperately ill, during active hemorrhage and may be done either in the operating room or if necessary at the patient's bedside. It is utilized ordinarily in three ways—as an independent procedure; as a preliminary operation; and as a combined procedure to supplement either artificial pneumothorax or thoracoplasty. From our experience. we ordinarily consider phrenic nerve operation as a procedure of second choice, artificial pneumothorax being first, though occasionally, with more limited lesions, we may undertake phrenic nerve surgery as the first procedure. We utilize phrenic nerve operations:

1. As a substitute for artificial pneumothorax, where this cannot be accomplished or is unsatisfactory in cases of predominantly unilateral tuberculosis of either the acute or chronic type.
2. To attempt control of profuse or repeated pulmonary haemorrhage where pneumothorax is impossible.
3. To supplement artificial pneumothorax, particularly in the group of patients presenting apical adhesions and adhesions between the lower portion of the lung and the diaphragm but not to the chest wall, where a relaxation of the lower portion of the lung by paralysis of the diaphragm may allow additional collapse for control of cavity or symptoms.
4. To supplement pneumothorax and allow a longer interval between refills.
5. To replace artificial pneumothorax by continuing partial immobilization of the lung as the pneumothorax is either lost or discontinued.
6. As a preparatory preliminary to thoracoplasty

by immobilizing the lung in the unilateral exudative type of tuberculosis until fibrosis occurs and thoracoplasty may be performed with less risk.

7. As a preparatory preliminary to thoracoplasty for the patient with extensive disease on one side and a smaller amount of active disease on the contra-lateral lung, pneumothorax being unsuccessful on the bad side, where the phrenic nerve interruption is done to stabilize this process and tide the patient along until the disease in the good side clears or becomes sufficiently stable to permit thoracoplasty without undue risk.

8. As a supplementary procedure following thoracoplasty to increase collapse and immobilization.

Phrenic nerve operations have been advocated as a test operation preliminary to thoracoplasty, particularly to test out the good lung, but our experience has indicated that this procedure has little or no value. It has also been advocated as a necessary preliminary before undertaking thoracoplasty, particularly where collapse is started above in order to prevent aspiration into the base on the operated side. Here again we know it is of no particular value both from the experimental work of Lemon and our clinical experience with lipiodol injections into the lung in patients who have had diaphragmatic paralysis in whom aspiration apparently occurs as readily into the paralyzed side as into the functioning side.

Phrenic nerve operations in our hands at Glen Lake Sanatorium in a series of over 300 patients exhibit some results which are nothing short of miraculous but many others which are very disappointing. The clinical results apparently are not directly related to the height of rise of the diaphragm. It must be stated, however, that approximately three-quarters of the patients obtain some relief or improvement in symptoms but that there are few who obtain complete permanent clinical results following this procedure. Clinically, it must be recognized that the effect of phrenic nerve paralysis apparently extends throughout the lung and apical lesions are affected as well as basal lesions. Occasionally annular shadows, apparently cavities, disappear completely from the diaphragmatic paralysis. If we include in this group a number of the patients previously mentioned with limited, soft exudative types of tuberculosis of recent origin containing annular shadows, we may report many good results, but we are including many lesions which are likely to clear readily with disappearance of annular shadows and positive sputum within a relatively short period of time under constitutional treatment alone. Occasionally a patient apparently requiring thoracoplasty is saved this procedure by the simpler operation, but this number is not great, as relapses from some of these apparent good results are not of infrequent occurrence, and many must come to more radical surgery later. Because of its relative simplicity, this procedure at the present time is being performed far more frequently than the good results apparently would warrant, particularly in patients with limited upper lobe lesions where diaphragmatic paralysis of a permanent type deprives the patient of a great deal of available good breathing space which he may seriously need at a later date. The paralyzed diaphragm may be a handicap to the patient later when more radical measures are under consideration.

Intercostal neurectomy, a temporary or permanent interruption of the intercostal nerves on the affected side, has been advocated for patients with extensive disease who are unable to take artificial pneumothorax and who have not obtained a satisfactory result from phrenic nerve interruption and who apparently are too ill at the moment for extrapleural thoracoplasty. This procedure must act by immobilization alone and it would seem that this immobilization probably does not exceed that which can readily be obtained by mechanical means without operative interference. A section of the insertion of the scalene tendons into the first and second ribs has been advocated as an accessory to phrenic nerve operations in order to reduce chest motion by removing its upper muscular suspension. The results to date with the limited experience available would scarcely lead one to become enthusiastic about it.

(To be concluded in the August Number).

CYCLONE, HURRICANE, TORNADO

A cyclone (Greek kuklos, circle) is an atmospheric disturbance extending over an area 100 to 500 miles in diameter, characterized by decrease of barometric pressure toward the center and by winds directed spirally inward. A hurricane (Spanish huracan) is a violent windstorm of cyclonic proportions, especially one in the West Indies; now, any gale of extreme and unusual violence. Nearly 70 per cent of hurricanes occur in the West Indies and China Sea in August, September and October. A tornado is a very violent storm, of small extent, usually occurring on the southeastern border of a cyclone, having a rotary motion and accompanied by a funnel-shaped cloud. A tornado is distinguished from a cyclone or hurricane in its extent and continuance. It is rarely more than a few hundred rods in breadth, and its whole track is seldom more than twenty-five miles in length. The word comes from the Spanish tornar, to turn (from its rotating motion), same as Latin torno, turn.

MECHANICAL CONSIDERATIONS OF INSPIRATION DURING AND FOLLOWING OPERATIONS*

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The act of inspiration is brought about by contractions of striated or so-called voluntary muscles through stimulations by voluntary motor nerves; it is, however, an involuntary as well as a voluntary physiological process. Just why the carbon dioxide content of the blood should affect certain voluntary motor nerves, the phrenics and the spinal thoracics, and not all voluntary motor nerves is probably due to a phylogenetic adjustment of necessity. If it were not for that, every voluntary muscle in the body would contract during inspiration. The mysterious and poorly understood respiratory center in the medulla has an influence upon the act of inspiration but no anatomical connection between it and the motor nerves of external respiration has been demonstrated.

External respiration is, therefore, an involuntary and, when necessity arises, a voluntary process but is carried on through voluntary motor nerves and voluntary striated muscles. One can voluntarily decrease external respiration up to a certain point of an increased carbon dioxide accumulation in the blood and can voluntarily increase external respiration up to a certain point of a decreased carbon dioxide accumulation in the blood. The greater the impediment to external respiration and the greater the demands there are upon it, the greater is the effort necessary to maintain and increase it by the striated musculature of inspiration, the intercostal and the diaphragmatic muscles. The maintenance of this increased activity depends upon the size and condition of these muscles, the amount of impediment to their activity, the condition of the cardio-vasculo-capillary circulatory apparatus and the condition and volume of the blood. As the effort syndrome of inspiration increases, the quicker is the onset of exhaustion. Inspiration not only brings air to the lungs but it is the principal agent in delivering blood to the right heart and since it is such a vital physiological process, it must never be given secondary consideration. As muscular, glandular and nervous exhaustion, local or general, is a condition toward death and to be avoided as much as possible preceding, during and following any major surgical procedure, every effort to prevent it is worthy of consideration.

The posture of the extremities and of the trunk, relative to the inspiratory effort, during and immediately following all so-called major operations, regardless of the type of anesthesia, has received very little attention in the surgical literature. When a patient is required to lie upon the abdomen and thorax or upon the back, the position of the arms may obstruct or facilitate respiration. While lying upon the back upon the operating table, the most popular position of the patient's arms is close to the sides and held firmly by straps around the wrists and occasionally above the elbows. While lying upon the abdomen and thorax upon the operating table, there seems to be no popular position; too often an attitude of indifference is assumed by the surgeon toward any position just so the arms are out of his way. It is needless to state that it is quite essential to control the arms as well as the legs, owing to the undesirable movements which many patients exhibit while going under general anesthesia and during operations under local and spinal anesthesia. The control of the arms and legs, however, is secondary to the ease of inspiration. With the arms held closely to the sides and along the edges of the table, patients often complain of an impediment to inspiration and of the weight unnecessarily borne by the forearms and wrists when the surgeon or his assistants lean against the sides of the operating table. Immediately following an operation under local anesthesia, the first request from most patients is for an immediate liberation of the arms, following which they take, with an air of relief, deep inspirations. While lying upon the abdomen and thorax, the principal complaint is an impediment to inspiration, the intercostal muscles and the diaphragm being overburdened by the weight of the trunk which must be elevated in order to inspire. Such mechanical obstructions to the expansion of the thorax and abdomen naturally result in muscular exhaustion, decreased pulmonary ventilation, increased compensatory action of the heart and, possibly, post-operative pulmonary complications.

During a reclining posture, while awake or asleep, normal individuals and patients seek a position wherein they may inspire with the greatest ease and rarely, if ever, will the arms be seen lying closely to the sides or lying prone with the pressure of the trunk upon the anterior portion of the thorax and abdomen. It seems natural, therefore, to have the arms abducted to the extent whereby the large muscles, extending from

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*From the Department of Surgery, College of Medicine, University of Nebraska.

TABLE I
Normal Respiratory Excursion
Supine Position

Male	Height	Weight	Arms Held Fast to Sides				Arms Held Abducted				% Increase	
			Inspir.		Expir.		Inspir.		Expir.			
			Thorax	Abdomen	Thorax	Abdomen	Thorax	Abdomen	Thorax	Abdomen	Thorax	Abdomen
	5 ft., 8 in.	214	38½ in.	37⅛ in.	38¼ in.	37 in.	38⅜ in.	37⅝ in.	38 in.	37½ in.	50%	
Female												
	5 ft., 2 in.	128	29¼ in.	33¾ in.	29 in.	33½ in.	29¾ in.	33½ in.	29⅜ in.	33¼ in.	50%	
Female												
	5 ft., 6 in.	102	28½ in.	27¼ in.	28⅜ in.	27⅛ in.	28¾ in.	27⅛ in.	28½ in.	27 in.	100%	
Female												
	5 ft., 6 in.	133	30¾ in.	28⅜ in.	30⅜ in.	28¼ in.	30⅝ in.	28⅜ in.	30½ in.	28¼ in.		

TABLE II
Forced Respiratory Excursion
Supine Position

Male	Height	Weight	Arms Held Fast to Sides				Arms Held Abducted				% Increase	
			Inspir.		Expir.		Inspir.		Expir.			
			Thorax	Abdomen	Thorax	Abdomen	Thorax	Abdomen	Thorax	Abdomen	Thorax	Abdomen
	5 ft., 8 in.	214	38⅝ in.	38½ in.	38¼ in.	37 in.	38⅝ in.	38 in.	38 in.	37 in.	66 2/3%	Decrease 33 1/3%
Female												
	5 ft., 2 in.	128	30 in.	34½ in.	27½ in.	33¼ in.	30½ in.	34¼ in.	28 in.	33 in.		
Female												
	5 ft., 6 in.	102	29¼ in.	27¼ in.	27¾ in.	26½ in.	29½ in.	27¼ in.	28 in.	26½ in.		
Female												
	5 ft., 6 in.	133	31½ in.	28½ in.	30 in.	28¼ in.	32½ in.	28⅜ in.	30 in.	28¼ in.	66 2/3%	Decrease 50%

TABLE III
Vital Capacity
Supine Position

Male	Height	Weight	Arms Held Fast to Sides	Arms Held Abducted	% Increase
	5 ft., 8 in.	214	210	220	.04%
Female					
	5 ft., 2 in.	128	125	145	16%
Female					
	5 ft., 6 in.	102	77	85	10.4%
Female					
	5 ft., 6 in.	133	60	75	25%

the thoracic wall to the pectoral girdle, act as elastic assistants during inspiration and leave the abdomen free for excursions of the diaphragm. If anyone, while erect or supine, will compare the effort syndrome of inspiration with the arms held closely extended along the sides of the body to the effort syndrome with the arms abducted, the difference in the ease of inspiration during the latter position will be most apparent. If this is more desirable during normal life, why would it not be even more so when a patient is tolerating a serious surgical assault and a devitalization by a general as well as a local anesthetic? It appears, from a purely clinical viewpoint, that all assistance possible should be given any patient for the purpose of easing any conscious or unconscious effort of vital physiology. The prone position, as all anesthetists know, predisposes to cyanosis, cardiac embarrassment and difficulty of anesthesia.

Comparing the inspiratory excursion of the thoracic wall while the arms are held strapped to the sides with the inspiratory excursion while the arms are held as in figure 2, it is noted that the difference on the average is greatly in favor of the latter. In other words, if the thorax measures 28 inches in expiration and 30 inches on as deep inspiration as is possible in the former position and 32 inches in the latter position, the difference in the curve of expansion is 100%, i.e., 2 inches as compared with 4. Comparing the vital capacity in the two positions, one also finds a corresponding degree of difference in favor of the latter. The greater the expansion of the thoracic wall, the less the abdominal distention and the intestines protrude less through the wound.

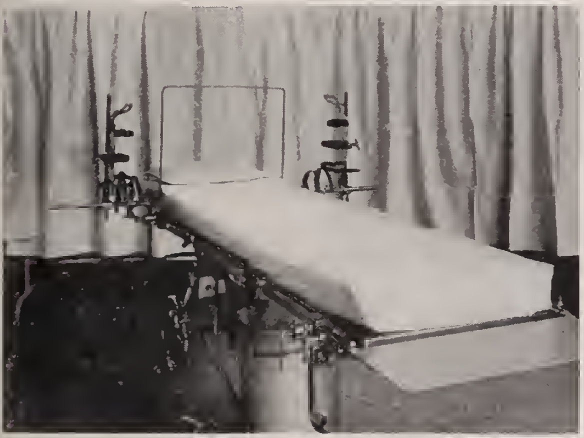
Fig. 1. Apparatus for supporting the arms during local, spinal and general anesthesias.

Tables I, II and III illustrate the method which I have used in measuring the normal and forced respiratory excursions, together with an observation of the vital capacity with the arms held fast to the sides and abducted. It will be noted that the inspiratory expansion of the thorax with the arms held abducted is not significantly greater than the expansion of the thorax with the arms held fast to the sides of the body. Many subjects have stated, however, that the ease of inspiration is markedly greater. It is interesting to note that the vital capacity is considerably greater with the arms held abducted.

Just what role the respiratory curve or inspiratory effort syndrome plays in post-operative pulmonary complications and cardiac embarrassment we have not learned to date. The known frequency and serious significance of lung complications warrant any scientific or empirical attempt to prevent them. Pulmonary complications consist chiefly of: (1) pneumonitis; (2) pleuitis or "pleurisy"; (3) embolism; (4) aspiration of mucus toward the pulmonary bronchi with or without bronchial obstruction and pneumonitis, and (5) varying degrees of alveolar collapse, known as atelectasis. The exact nature of the very common complication known as "pleurisy" has not been determined. There is no question as to the frequency of embolism of the solitary, multiple and bacterial, fatty and venous clot types. Aspiration of mucus, practically always contaminated with bacteria, is a well recognized factor in the etiology of alveolar infection and, possibly, of obstruction of the bronchi with pulmonary collapse. Alveolar collapse occurs in isolated areas or involves the entire lung on one side, both types often being overlooked owing to a spontaneous recovery following an error in diagnosis of pneumonitis.

Legendre and Bailly⁽¹⁾, according to Band and Hall⁽²⁾, may have recognized a pulmonary collapse after death had occured but according to all of the knowledge which we have at hand, W. Pasteur, in the *American Journal of the Medical Sciences, 1890, C. 242,* was the first to place it upon a sound clinical foundation in the *Lancet 198, II 135; ibid., 1910, II 1080; British Journal of Surgery, volume 1, page 587, 1913-1914.*

Alveolar collapse naturally occurs from a disappearance of intra-alveolar air due to: (1) compression of the lung, and (2) an obstruction of a bronchus with an absorption of the air within the alveoli by the adjacent alveoli. The large amount of elastic fibres throughout the lungs is a constant factor in all degrees of normal and abnormal pulmonary collapse. It is quite evident

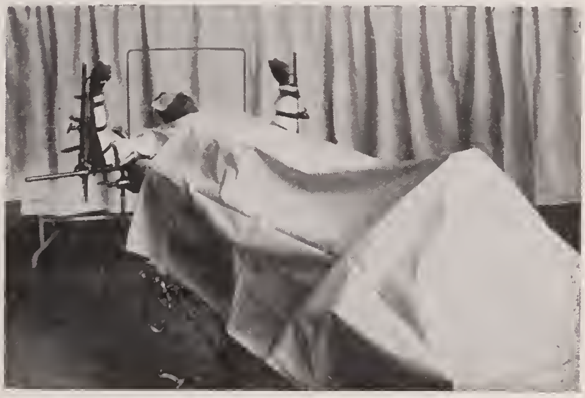
Fig. 2. Patient's arms strapped to supports. Note the freedom of the hands which is favorably commented upon during and after the operation.

that a certain degree of pulmonary collapse is essential for the circulation of blood and gas through the lungs. The factors which limit the extent of normal pulmonary expiratory collapse are the pleural vacuum and the intra-bronchial air pressure. When either one or both are decreased, alveolar collapse occurs correspondingly in degree.

It is well known that complete collapse of the right or left lung occasionally occurs and it is thought by many students of this subject that isolated area of alveolar collapse—spotted atelectasis—occur freuently and that these areas may be the precursors of "spotted" or broncho-pneumonia, enhanced by a local sluggish circulation. Perhaps the greatest demand for the post-operative administration of CO_2 by inspiration is with the thought of insufflating or distending these isolated collapsed alveoli and of relieving capillary congestion.

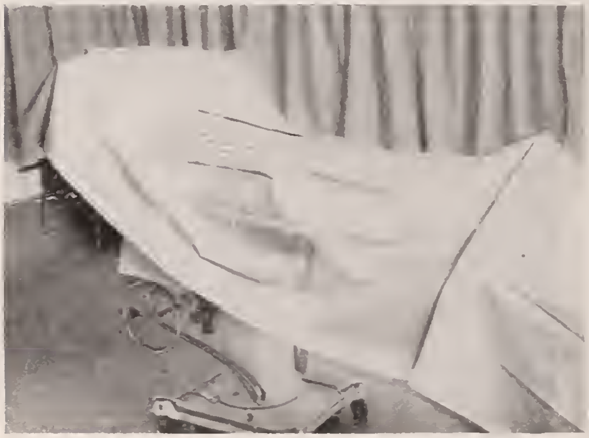

Fig. 3. The arm supports draped which act as a screen. Here is the main objection to this apparatus owing to the limited positions it allows the second assistants.

A free breathing patient going under an anesthetic and during the time of surgical anesthesia is greatly desired by the anesthetist and by the surgeon. Free inspiration results in a greater vital capacity; faster, smoother and safer induction of anesthesia; less embarrassment to the cardiac circulation, and a much less effort syndrome on the part of the respiratory muscles than when inspiration is impeded in any manner. There are two general factors which interfere with pulmonary ventilation, viz.: (1) an obstruction of the bronchi from an obstruction within and compression from without; (2) compression of the thoracic wall by (a) "spasm" of the diaphragm or intercostal muscles under an incomplete inhalation of an anesthetic, and (b) any external factor which limits free movement of the thoracic wall, such as pressure upon the patient's thorax from contact with the surgeon or his assistants and strapping the patient's arms tightly down against the sides of the body.

In 1912, I had made an arm support which held the arms folded above the cervico-thoracic area, using this position also as a screen. The patients spoke of the greater ease during inspiration and since then, I have devised several types of arm supports and I am now using the one illustrated in figure 1. My object in employing these arm supports has been to facilitate the effort syndrome of inspiration in the supine position, thereby increasing the pulmonary ventilation and easing the cardiac strain. It now seems rational to assume that an interference with pulmonary inflation inhibits the cardiac output.

Following an operation, particularly one under general anesthesia, the patient is usually placed upon the back in bed with the arms held fairly snug to the sides by a conscientious and painstaking application of the bed covers. While upon the operating table, on the way back to the sickroom and during the first few hours in bed following the operation, not an inconsiderable amount of time is passed by the patient with marked restriction of the natural excursion of the anterior and lateral thoracic wall. The far-reaching results of restricted respiration over this, a prolonged length of time, may be of no little consequence. The increased inspiratory effort syndrome under general or local anesthesia undoubtedly hurries that condition known as exhaustion, which is always an impediment toward recovery following a major surgical operation. With exhaustion or restriction of the activities of the respiratory muscles, probably many pulmonary alveoli are not distended. During normal life and normal exertion, undoubtedly many alveoli are not inflated—physiological atelectasis. Just where to draw a line of normal and subnormal alveolar collapse is beyond our conception at the present time but free breathing, unimpeded inspiration, is always to be desired. We all agree with Band and Hall (ibid.) who state that the so-called Fowler position is rarely accomplished, owing to the constant tendency of the patient to slide downward so that his body is bent rather sharply at the junction of the thorax and upper abdomen rather than at the hip joints. This position not only defeats its original purpose but greatly limits inspiration. The limitation of movement of the abdominal wall from surgical wounds, distention of the intestines, tight dressings and sedatives are additional factors.

An interesting experiment by Band and Hall (ibid.) in the production of pulmonary collapse by an artificial obstruction of the bronchus, together with restricted respiratory movements due to the tight application of adhesive strips to the lower ribs in dogs, strongly suggests that freedom of respiration is essential. Patients almost always appreciate the relief from inspiratory restriction when the upper adhesive is removed from dressings over upper abdominal wounds.

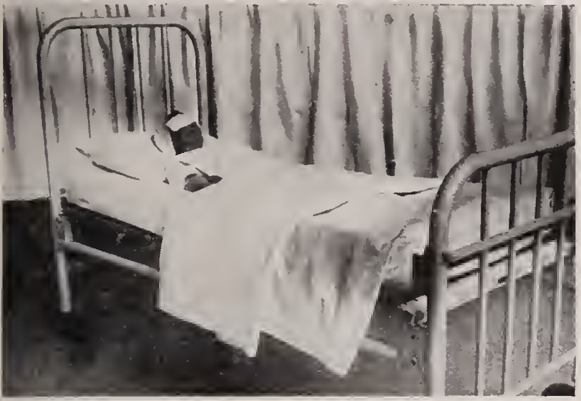

Fig. 4. Usual position of the patient in bed immediately after the operation under general anesthesia. The covers are usually heavier and more closely applied to the sides of the body.

For a number of years, I have not used adhesive in any manner to support an abdominal wound, employing merely enough to retain the dressings.

How many cases of massive and spotted pulmonary collapse which are commonly overlooked it is impossible to conjectiure but I feel that any effort which increases the ease of inspiration during and following major surgical procedures may be a factor in decreasing the frequency and severity of post-operative pulmonary complications and exhaustion. The use of arm supports in the supine position during and after operations, herein illustrated—figures 1 and 5, definitely brings about a greater inspiratory excursion and a greater pulmonary ventilation with far less muscular exertion than when the arms are held to the sides of the thoracic wall. The post-operative application of carbon dioxide is undoubtedly useful as an additional factor in distending alveoli with air. The arms may well be supported, as in figure 5, for at least 24 hours after an abdominal operation whenever the patient is not lying upon the side.

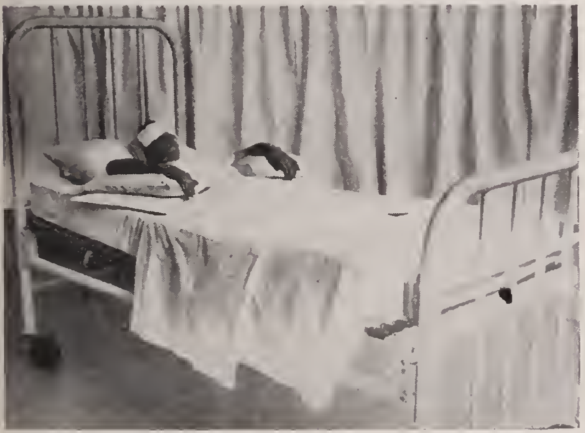

Fig. 5. A position of the arms of the patient, particularly while coming out of general anesthesia, which assists in the inspiratory effort syndrome and inflation of the lungs.

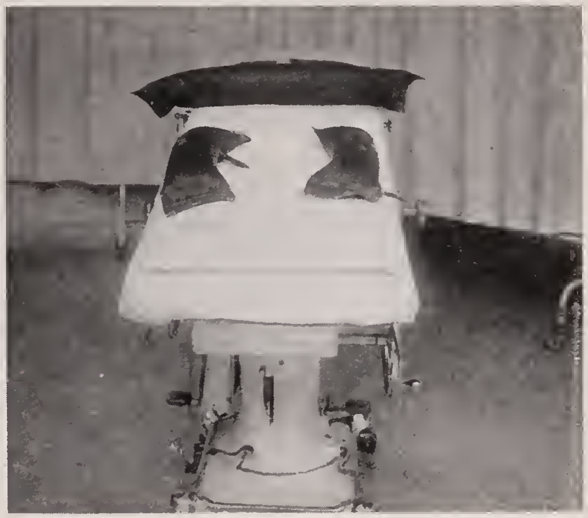

Fig. 6. Pneumatic tubes so placed that the shoulders and the hips are held off the table, allowing free expansion downward of the thorax and abdomen.

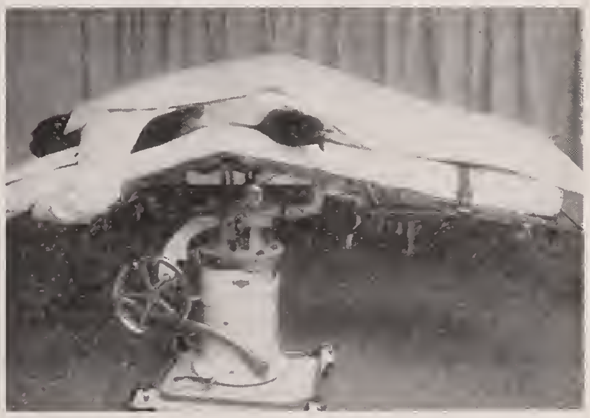

Fig. 7. Patient lying upon the tubes illustrated in Fig. 6. Pneumatic support to the axillary and inguinal regions is also obtained.

These supports may be used for operations upon the breast and thorax and they can be adjusted in almost any position desired, even along the sides of the patient. In the last position, although the inspiratory effort is restricted, pressure upon the arms and hands is prevented, which is greatly appreciated by the patients.

During the prone position for operations upon the back of the head, neck and trunk, the arms are usually held either to the sides or allowed to hang over the operating table. If a surgeon will voluntarily assume that position for a few moments, particularly the flexed position for operations upon the rectum, he will note the marked compression of his anterior thoracic and abdominal walls and the tremendous energy placed upon his intercostal muscles and diaphragm to bring about inspiration. I had one patient suddenly expire in that position during an operation for decapsulation of both kidneys. The extreme cyanosis and failing heart muscle were undoubtedly brought about by his position upon the table. I have experimented with pneumatic tubes with the prone position, as illustrated in figures 6 and 7, and if the patient states that inspiration is not impeded, that position upon the tubes is maintained. A personal trial by the surgeon and his assistants relative to the increased ease of inspiration while lying prone upon these pneumatic tubes will quickly convince them of their value. The inflation should not be over 5 to 10 pounds, varying according to the weight of the patient.

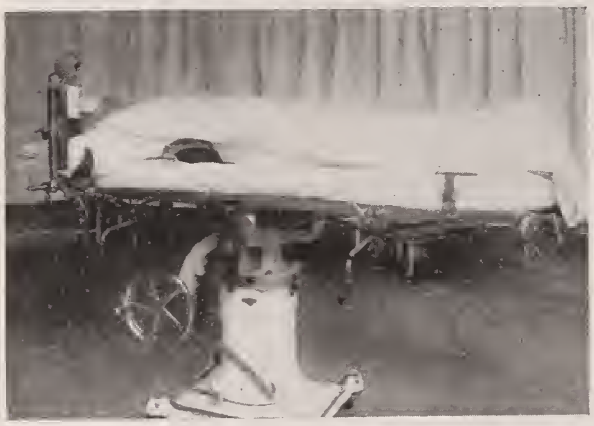

Fig. 8. A pneumatic tube, lightly inflated, supports the lumbar curve. It should be inflated just enough to keep the compressed sides of the tube apart.

For many years I have used a short pneumatic tube, figure 8, upon which the lumbar curve rests, a position which I feel has prevented the common and distressing post-operative backache. With the use of this tube and pillows beneath the legs below the knees, I have practically eliminated sacro-iliac and lumbar strain following the Trendelenburg posture.

Resume: Free breathing and ease of inspiration during and following an operation under general or local anesthesia appear to be desirable since post-operative pulmonary complications are not decreasing. The use of the above-illustrated arm supports during the supine position and the use of the pneumatic supports during the prone position greatly facilitate the ease of inspiration and may prevent post-operative pulmonary and cardiac complications. Undoubtedly, exhaustion from inhibited inspiration is largely prevented. When patients are placed in any position upon an operating table, comfort is essential but it is always secondary to any position which eases inspiration. If the inspiratory effort syndrome is impeded, a change in position and accessory supports are strongly indicated.

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ELKS CRIPPLED CHILDREN'S CLINICS*

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Beatrice, Nebraska.

While the committee on the Cost of Medical Care has labored to adjust Medical Practice to Modern needs, and numerous critics have assailed us for our alleged failure to meet the service demand, there has been born, through the direct aid of the rank and file of the medical profession in this state a movement that bids fair to silence caustic criticism and perhaps aid in solving part of the cost problem.

The idea of sponsoring Crippled Children's Clinics took definite form at the state Elks Association meeting in June, 1929. Having chosen this project as a legitimate activity of the order, a voluntary endowment fund of $10,000 was established and a committee of one physician and six laymen appointed to put the plan in action.

Precedent for this project was found in a similar one already operative in the state of New Jersey. There it had already grown to considerable proportions and was receiving much favorable notice in Elk circles. With the New Jersey experiment for a basis the committee began its work of devising a program adapted to Nebraska. Contact was established with the division of Rehabilitation of the State Department of Vocational Education and together they formulated the following objectives and plans.

Objectives:

1. To provide opportunity to all crippled children in Nebraska for a thorough orthopedic examination.

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*Read before annual meeting Nebraska State Medical Association, Omaha, May 12-14, 1931.

2. To assist in working out a plan for the treatment of those unable to bear their own expense.
3. To aid in securing education and vocational training for handicapped children.

In brief, to fit dependent persons for independent lives of usefulness.

Wisely the committee chose to supplement rather than duplicate existing agencies—There was seen to be a gap between patients and facilities for treatment. This gap they sought to bridge.

It was fully understood that clinics are primarily the function of physicians, therefore no infringement upon their particular sphere could be permitted. The relation of lay groups to the clinic must be essentially the same as that of church organizations to their endowed hospitals. In short the Elks assume responsibility for ways and means; the physicians do the work of examining. Physicians are not asked to give free treatment, this item of cost is to be met through county or state funds and voluntary contributions.

Having agreed upon the general policy, the first move was to conduct a survey of the state to determine the number and location of the patients.

For this purpose the State was divided into nineteen districts known as Elk Jurisdictions and the work confined to one district at a time.

The Beatrice Jurisdiction comprising all of Gage and part of Jefferson, Saline, Johnson and Pawnee counties was chosen for the initial attempt. This area contains approximately 40,000 people and is the smallest of the jurisdictions.

From existing records there were known to be thirty-seven crippled children in this territory.

Early in 1930 the field worker began his canvass, contacting physicians, school authorities and other sources for his information. In the end he was able to locate and interview ninety cases where only thirty-seven had been officially known.

During this canvass the field man was careful to get the individual reaction of physicians to the project so that when the material evidence was submitted to the county society, there was no dissenting voice to the proposal of holding a clinic.

As there was no locally established precedent for conducting such a clinic, organization of the physicians into a working team gave rise to some perplexing questions. Should other than county society members be admitted to the examining staff? Should a consulting orthopedic surgeon be included? It was decided that non-members or even irregular practitioners were welcomed to bring in patients, but were not to act as examiners. Also, without any reflection on the ability of local surgeons it was the opinion that an orthopedic consultant would add much weight to the verdict rendered.

Incidentally when the consultant has the knack of teaching, excellent use of the clinical material can be made for purpose of instruction.

Clinic Set Up:

The Elks Club House furnished a very satisfactory place for doing the work. Ample waiting room and comfort facilities for the patients, sufficient small rooms for conducting various examinations in privacy, and a large well lighted room for orthopedic demonstrations. Nurses, office girls and lay workers made up the corps of assistants.

Preliminary examination was divided up according to the major experience of the physicians, so that eyes, ears, nose, throat, teeth, lungs, heart, abdomen and nervous system all received rather specialized inspections. Necessary laboratory tests also were done.

The patient came to the orthopedist with the essential points of history and physical findings recorded, thus facilitating his work. The examination completed, the patient then went before the advisory committee of physicians who interpreted the findings and recommendations to the parents, also giving a rough estimate on cost and time of treatment. Always the instruction to seek the guidance of the family physician was stressed.

The final step in organization was the creation of a permanent general committee to be entrusted with the follow-up work. The personnel consisted of representatives of the medical society and participating civic bodies. The duties of this group are to pass on the merits of patients appealing for aid, direct them into proper channels, approve expenditure of funds and maintain contact with the families personally or by letter. Much of the benefit to be had by the patient depends on the tact and perserverance of this committee. Parents often need to be stirred to action in the interest of these unfortunate children.

Eleven months have passed since the first clinic, time sufficient to give some idea of actual results. Thirty-three patients were examined though only thirty records are available for analysis. Grouped as to cause of disability they were:

Poliomyelitis—10.
Congenital Deficiency—6.
Bone Tuberculosis—2.
Birth Palsy—2.
Club Foot—2.
Arthritis—2.
Spina Bifida—2.
Traumatic Injury—2.
Flat Foot—1.
Epilepsy—1.

Eighteen were favorable subjects for treatment; twelve should be classed as permanent institutional cases. Of the eighteen favorable cases ten could be treated at local hospitals or at home. Ten out of the entire group needed partial or entire financial aid.

To date, fifteen clinic patients or fifty per cent are accounted for. Ten carried through the advice received—nine of these were benefited; one a three months old infant with spina bifida and congenital dislocation of the hips died following operation. Four others were found to be under satisfactory treatment and have continued as they were. One died of intercurrent disease.

So far as the follow-up records show fifteen have not availed themselves of the advantages offered by the clinic.

Passing now to subsequent clinics; a second one was held in Beatrice in September at which twenty-two patients appeared. York followed in November with fifty-seven children examined. In February of this year Grand Island cared for a total of one hundred five while in April Fremont put through sixty-three.

The survey findings in these four jurisdictions reveal some interesting facts.

The records in the State Department of Education listed 215 Crippled children in this area between the ages of five and twenty-one. Canvass by the field worker added 337 names, making a total of 552. Pre-school age children made up the bulk of the addition.

Based on these figures an estimate of 3,000 crippled children in the state is fairly conservative.

At least 25% of them need financial aid if treatment is to be undertaken. Such a number would severly tax the facilities of existing state institutions.

In the five clinics already held, 280 patients have been examined and received expert orthopedic advice.

Among the chief causes of disability, congenital lesions rank first with 115 cases or 41%, poliomyelitis following with 88 or 33%. Recommendations for treatment:

Major operation	29%
Braces, casts or appliances	31%
Medical Treatment	21%
Observation and Physiotherapy	65%
Already receiving adequate care	4%
Requiring vocational training	13%

Personnel of Clinics:

Physicians, Surgeons and Dentists	183
Nurses	83
Lay Workers	160

Based on figures from the Beatrice jurisdiction 2,292 children in the state need examination. 1,375 of these need further treatment.

It is estimated that the average clinic represents a contribution of professional time and skill amounting to $1,500.00.

It is the present purpose of the Elks state committee to carry on with this program throughout the remaining fifteen jurisdictions, hoping that where once established the work will be perpetuated. One clinic annually in each district should cover the actual needs. Rural districts are to be served first because of their larger percentage of neglected cases.

Great credit is due the Elks committee, the local Elk clubs, the various civic bodies, the workers from the department of vocational education, dentists, nurses and civilian assistants for making this movement a success, but of outstanding merit has been the complete cooperation of the county medical societies and their consultants, for upon them hangs the fate of the enterprise.

Observations: One is first astonished by the number of distorted little bodies assembled at the clinic, then stirred to action by the mute appeal of their unfortunate condition. Some have had good treatment already, some have been neglected, some have been cruelly victimized by irresponsible healers. No physician or layman can go through this experience without its touching his better nature.

As a medical society project the clinic is a living issue upon which members can work shoulder to shoulder regardless of personal differences. In the one item of clinical instruction alone most doctors are amply repaid for the time spent.

As a practical demonstration of the aims of scientific medicine it matches well with other forms of health publicity and the cooperation of medical and lay-workers in a common cause builds up public confidence in the integrity of medicine.

So long as medical men as a group are responsive to the real needs of the people and are alert to assume their natural position of leadership there need be no fear of a popular demand for subsidized medical practice.

DISCUSSION

C. P. FALL, M. D., (Beatrice): Dr. Buckley has told you pretty thoroughly what we have accomplished by the Clinic. I happen to be unfortunate—or fortunate?—enough to be a member of the State Elks Committee. I am the only physician on that committee. Our district held the first clinic.

This work has been a revelation to me. I never realized what it meant until I discovered the psychologic attitude of the people in regard to the crippled condition of their children. There are many things involved. Parents are loath to let other people know their children are in any way defective. They are very neglectful, and very ignorant. When you start action, the psychologic condition is this: They resolve this question in their minds: "If I take my child to the doctor, I suppose he will have to operate. Maybe the osteopath or chiropractor will do just as well."

They decide to take the child to the chiropractor or osteopath. We found so many children who had been under the care of the osteopaths and chiropractors, we were surprised. Some made the statement after the results of examination were given, that they had spent all the money they could afford. It was usually on some chiropractor or osteopath they had wasted their money.

We have heard our scientific program this afternoon, which was interesting. There are other angles to the practice of medicine. Our profession owes a duty to the community, and I think it is one of the duties of the profession to look after the crippled children—a duty which it has never before performed in this state.

The Elks organization realizes nothing can be done without the co-operation of the medical profession. We as the Elks Committee ask the medical profession for their services—not as free service, because many of these patients are able to pay. Many of these children are neglected, and will become dependents upon the community if not taken care of. Something must be done, and the parents have minimized their duties to their children.

I have in mind one boy in our community—a member of a poor family. They had no idea he could be made self-sustaining. He has taken a course in radio engineering, and now it begins to look as if he will be self-sustaining. There are many other cases we have benefited. We have only been doing this work a little over a year. It takes time to accomplish something.

The Elks have put up an endowment fund. The legislatures are willing to support this project financially; but we can not do it without the help of the medical profession. If the medical profession will take an interest, they will perform a duty for the community. Every man owes something to the community in which he lives.

I wish to read some extracts from a report made by Mr. A. H. Mann, field representative for the State Elks Crippled Children committee, which were quoted by Mr. J. R. Jewell, Supervisor Civilian Rehabilitation, in an article in the Vocational Education Bulletin, last month: "In nine months, 27 children have already received permanent physical benefits. Of these, ten were operated and are improving; six have received braces; seven are being prepared for operations and four have completely recovered as a result of treatments recommended by the clinics. Two more are receiving special education; four have been enrolled in vocational training programs and at least 12 more will be enrolled by fall."

Those children will be equipped for self support, and will not be a charge on the community. In only 25 per cent of the cases, will it be necessary to furnish financial aid, which the Elks are willing to supply.

In a majority of the cases where the parents were able to care for the children financially, they did not know the child could be aided by medical or surgical science. The furthering of this program will be an educational force in strengthening the faith of our people in the practice of regular medicine and surgical science.

ANTERIOR POLIOMYELITIS: DIAGNOSIS, PROGNOSIS, AND TREATMENT*

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I have often thought I would like to write a book entitled "The Romance of Medicine." Among the things I would include in this book would be "The Romance of Infantile Paralysis." The story of infantile paralysis was for a long time more or less of a tragedy. Some of the tragedy still remains, but the romance is still present and the tragedy of the story is to some extent disappearing.

Many of the problems are unsolved. The real cause of the disease is not yet known. We are all more or less skeptical and are endeavoring to maintain an open mind whether or not we as yet have the correct treatment for the disease. The disease has been of great interest because of these problems, and also because of certain funds that have been given to the cause from time to time. Among them is the 'Milbank Fund." Some of this fund has gone to the University of California; some to Dr. Gay's laboratory at Columbus; another portion to Dr. Jordan at the University of Chicago; other allotments have been to Bordet's laboratory in Paris; to the Lister Institute in London, and to Dr. Park of the New York Public Health Service. The Rockefeller Institute in New York has been working independently for a good many years. We all have intimate knowledge of the work of Dr. Rosenow of The Mayo Clinic.

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Changes in our knowledge of poliomyelitis have been considerable. We now recognize that infantile paralysis is a general disease, the result of the invasion of the body of certain unknown organisms, and that paralysis may or may not be the result of this invasion. We know that probably over 50% of the cases which occur are of the so-called abortive type and that paralysis, if it does occur, is a result of the disease and not the disease itself as was formerly supposed, and as the name infantile paralysis would indicate.

As the result of education and investigation, we are able to diagnose the disease much earlier than heretofore. We have also progressed so that we recognize it tends to occur in epidemics. Further progress has been made in the bulbar type of the disease. We are coming more and more to believe that certain bulbar cases tend to recover apparently with or without so-called specific treatment. These cases present difficulty in swallowing, talking, and are unconscious, yet recover completely. In a cursory examination of the literature, I found twenty cases of the bulbar type reported. Out of that number, thirteen recovered without treamen. Personally, I have had two such cases recover completely.

How is the disease carried? As far as our present knowledge goes, it is carried by contact —human carriers—direct contact with one who has the poliomyelitic germ in his nasal secretions and transmitted through the olfactory channels. Flies and insects have been accused. It is a little difficult to believe that the bite of an insect would produce a disease so severe as poliomyelitis. It has been proven that although flies and insects may carry the disease and transmit it to food, such food, even though swallowed, cannot produce the disease.

The germ of poliomyelitis is tenacious. It withstands glycerinization for a considerable time. Its life cycle is not destroyed by drying or freezing. It becomes inert after being subjected to heat from 45 to 50 degrees centigrade. In this tenaciousness the poliomyelitic germ is somewhat similar to the rabies virus. Several years ago the Rockefeller Foundation brought out the fact that weak solutions of hydrogen peroxide killed the germs of poliomyelitis. This has not been taken up in a general way. Perhaps in our every day work we might prevent the disease, especially during epidemics, by advising gargles and nasal douches, with weak solutions of hydrogen peroxide.

Swimming in a river evidently has some bearing on increasing and transmitting the disease. This is evident because of the many cases which occur after swimming in various rivers and creeks. We should apply this in an every day way and caution our clientiele accordingly.

The cause of polio is not known. We do know it is a so-called filterable virus. There is nothing known as to its habitat outside the body, or as to its life. Experimentally, it may be transmitted to monkeys and rabbits, by scarifying the nasal mucous membranes, particularly monkeys develop the disease in this manner. Evidently there is a certain amount of immunity established in most of us as we grow older. In 1916, in New York City, only 2% of those exposed to poliomyelitis developed the disease. Children from two to five years are most susceptible. There has been only one effort made to produce immunity against poliomyelitis in a wholesale way. In Sweden seventy-three people under twenty-five years were immunized by injecting 5 c.c. of convalescent serum intramuscularly. In those individuals only one developed poliomyelitis. Eighty-four cases not similarly injected were used as control. In these, fourteen people developed the disease. The epidemic happened to be a mild one. It shows, however, the possibilities of wholesale immunization.

Why the disease is not more common is due to the fact that its virulence is not so great as other diseases transmitted in the same way. It is estimated that poliomyelitis is 1/15 as virulent as scarlet fever. Experimentally the disease develops in monkeys three days after scarifying the nasal mucous membranes with the virus. In epidemics studied, of those exposed one-half developed the disease within a period of three days, almost all within a week, and all in twelve days. So a period of observation of two weeks affords ample opportunity to know whether an exposed individual will develop polio.

Some controversy will exists regarding the pathology of polio. Most observers believe that the disease primarily involves the blood vessels of the cord, particularly the portions of the cord where the blood supply is most abundant. These blood vessels and the surrounding areas become congested and edematous, finally completely shutting off the nourishment to the nerve filaments of the cord. These nerves thus deprived of nourishment finally degenerate and are unable to carry on their proper function. Other observers believe that the disease is primarily confined to the lymphatic system, involving Peyer's patches, intestinal follicles, mesenteric lymph glands, retroperotineal glands, tonsils, lymph glands of neck, axilla, and groin.

Our present quarantine arrangements for the prevention of the spread of the disease are no better than in other diseases. The nasal secretions and possibly the intestinal secretion should be disinfected.

The early diagnosis of poliomyelitis before the onset of paralysis is not attended with insurmountable difficulties, if one has the disease in mind, especially from June to November in each year. In order to diagnose it early we must become what I have chosen to call 'polio-minded." We must remember that there is such a disease affecting individuals at a certain time of the year. We must also remember that if anything is to be done to prevent it from becoming a serious tragedy, it must be diagnosed before the onset of paralysis.

In the *Journal of the American Medical Association* for May 21, 1932, you will find an editorial which states in substance that any one who attended the New Orleans session and listened to the lectures and demonstrations concerning poliomyelitis could not fail to diagnose poliomyelitis at the earliest possible moment. The point is well taken. The symptoms are not well defined and are manifested in an indefinite way. The child has been indisposed, at times there has been constipation, at other times diarrhoea. On other occasions symptoms referable to the respiratory tract have been paramount. A coryza or a bronchitis has been in evidence. Nervous symptoms may at times be present. Irritableness, a marked desire to sleep, and possibly convulsions, may usher in an attack. Fever is a constant symptom, usually from 100 to 101 degrees, rarely it is higher. It is always present. Almost constantly there is present an angina; the tonsils are red and hypertrophied, the pillars are inflamed. The most common outstanding single symptom is neck rigidity. It is the one symptom on which most reliance can be placed. It is difficult to elicit, but if care is taken and the normal resistance of children on examination for this symptom is taken into consideration, the abnormal will be apparent. It consists of a definite tension and rigidity of the posterior neck muscles when the head is flexed upon the chest. This tension is not as manifest in poliomyelitis as it is in cerebrospinal meningitis. As you lift the head up, the spine comes up with the neck and there is a tendency for the head to flop back. This is quite characteristic. There is also present, usually, a certain definite resistance to examination, probably caused by fear of pain if the position be changed. Undoubtedly there is always present more or less muscle pain. Profuse general sweating may occur. The patellar reflexes early in the attack are usually exaggerated. This increase in patellar reflex is most pronounced in the meningitic type of the disease. Oftentimes there is present certain changes which take place in the response to the patellar reflexes. At one examination they are exaggerated, at another a slow response is elicited, only to be replaced by a quick response. The presence of a positive *tache cerebral* may be of some assistance in your final summing up of diagnostic points. Its absence is without significance.

If these rather indefinite symptoms are present from June to November, and if you are "polio-minded," you should have in your mind a distinct impression and a strong suspicion that the malady from which your little patient is suffering may be infantile paralysis. The next most important thing to do is a lumbar puncture . If you find an increased cell count up to 1000 or more, per cubic millimeter, the diagnosis of polio is complete.

In Omaha we are endeavoring to organize ourselves so we can do a lumbar puncture and cell count in the home, so that no time will be wasted in endeavoring to make an early diagnosis.

The prognosis depends, first, upon its early recognition before the stage of paralysis; and, second, upon the treatment. There are many epidemics of poliomyelitis not particularly severe. The so-called abortive cases make it difficult to determine the severity of the illness. When there is present foot drop, the prognosis for that particular individual is much better if proper support to the foot is applied early.

What can you do for your patient with poliomyelitis? I believe our attitude should be entirely changed and we should realize that we can do something. Recognize the disease early. Institute the treatment as we see it.

Rosenow's serum has been used to some extent in Nebraska, with some success. The statistics are available to all of us. Personally, I believe Rosenow's serum has some value as a therapeutic agent in the prevention of paralysis. In some instances it seems to have some value even after paralysis.

Human convalescent serum has been used quite extensively of late years. It is given intraspinally after lumbar puncture has been done. It is difficult to obtain such serum in Omaha. When administered early in the treatment it has been found beneficial in epidemics occurring on both coasts.

We used human convalescent serum in the treatment of infantile paralysis in Omaha during 1931, working through the Omaha-Douglas County Medical Society. Serum was collected and made available to the profession. In two instances reported by physicians, the results from the use of human convalescent serum were quite spectacular. One youngster had paralysis in one leg. Human convalescent serum was injected into his spinal column after some fluid had been removed. He recovered very promptly the complete use of his limb without any after effects. Similar spectacular results have been reported in other sections of the country.

Horse serum has been used particularly on the east coast. Horses have been given this virus and their blood serum injected into humans with some degree of success. Another treatment which has been advocated is multiple lumbar punctures. Usually this has been used in conjunction with convalescent or Rosenow's serum, so that no great amount of real benefit can be attributed to the lumbar punctures.

With regard to "normal blood serum," we all have a certain immunity against poliomyelitis. If some of your serum or mine is given, it undoubtedly has some effect upon recovery. In certain localities a portion of convalescent serum and a portion of normal serum combined, is being used. This helps very materially if the supply of convalescent serum is limited.

Finally, let us be "polio-minded," remembering that usually three days elapse from the onset of symptoms before paralysis, and that we may prevent permanent damage by promptly instituting the treatment which seems to be proper at the present time.

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SPINAL ANAESTHESIA*

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INTRODUCTION

The subject of spinal anaesthesia is one about which many directly conflicting reports may be found in the literature. An example of the extremes of opinion regarding its safety is well portrayed by the late John B. Murphy who expressed his bitterness toward this type of anaesthesia by saying "The mortality of spinal anaesthesia is such as to cause it to be abolished as an analgesic of choice, if not sufficient to cause statutory enactment against its use", while a directly opposite view is expressed by Jonnesco who states "There are no contraindications for general spinal anaesthesia which is absolutely safe and has never caused a death."

As the above opinions were expressed within a few months of each other, and similarly divergent views of emminent surgeons are being expressed at the present time, it is evident that somebody is wrong. Investigation reveals that at present spinal anaesthesia is extensively employed in a few of the most notable hospitals, but is assiduously shunned in many others of equal prominence; so it is believed that any contribution to this subject that is based upon actual experience is worthy of consideration, and that is what we propose to present in this paper.

At this institution spinal anaesthesia was begun very cautiously, and the reactions of the patients carefully watched for the many dire manifestations that deluge the literature. At present, after nearly four hundred spinal anaesthetics without any fatalities or serious complications, or in fact *without even a scare,* we are convinced that this type of anaesthesia is entirely safe when properly administered. It is entirely conceivable that with this, as with any other type of anaesthesia, death could occur from improper administration; however, we believe that several critical cases have been successfully operated in which the chances of mortalities would have been markedly enhanced by the use of ether anaesthesia. A striking example of this was a patient whose leg had been crushed by a train passing over it. An attempt to operate under ether anaesthesia in another hospital was stopped because of shock. The wound was packed with gauze, a tourniquet applied, and the patient hurriedly transferred to this hospital in a semiconscious condition with a pulse of 175. The thigh was immediately amputated under spinal anaesthesia without apparent increase in shock, a blood transfusion was given, followed by a normal recovery. Cholecystectomies, prostatectomies and other operations on patients of advanced years, have been successfully performed under spinal anaesthesia, with whom recoveries would have been very doubtful if ether anaesthesia had been employed, but space will not permit a description of these individual cases.

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STATISTICS

Statistics have been carefully tabulated on every case by the employment of a special form for this purpose which includes data as to pulse, blood pressure, respiration, sweating, vomiting, etc. After the reactions of the patients had been sufficiently studied, we cautiously discarded the many useless and meaningless precautions found in the literature and adopted several new measures of our own which have proved beneficial. We now have perfect confidence in this type of anaesthesia, have fair control over it, and have entirely discarded the older types of anaesthesia for surgery below the diaphragm. Sterile crystals of novocain dissolved in the spinal fluid which is re-injected into the spinal canal is exclusively employed. Statistics are based on the first three hundred operations as no additional information has since been revealed.

The types of operations include appendectomies, herniotomies, amputation of leg, gastric and duodenal ulcers, intestinal resection, cholecystectomies, nephrotomies, spinal bone grafts, prostatectomies, and in short, practically all operations common to male patients. Ages of patients varied from 29 to 67 years. Duration of operations varied from 9 minutes (appendectomy) to 2 hours, 32 minutes (complicated herniotomy). Pulse rate varied from 56 to 132 during operation, but usually was slowed about 10 beats below the patient's normal pulse. Blood pressure usually presents a fall; the greatest systolic drop being 70 points (from 160 to 90), the greatest diastolic drop being 50 points (from 80 to 30). The average systolic drop being 28 and the average diastolic drop being 15 points. 4% of cases presented a persistent rise in blood pressure during operation, the greatest being from 122 to 157 systolic, the diastolic remaining practically constant. 35% of cases revealed a higher blood pressure at the end of operation than at the beginning, having recovered from a slight fall. 61% revealed a lower blood pressure at the end of operation, but they all returned to practically normal elevations or higher within a few hours after operation. In 55% of cases ephedrine sulphate was given to boost the blood pressure—possibly unnecessarily. Spinal anaesthesia failed with one case, or ⅓ of 1%, with the usual technique, and ether was immediately substituted without ill effects. 13% vomited, 3% nauseated only, while 84% showed no G. I. symptoms. No respiratory disturbances revealed. Post-operative complications: Deaths: none; Paralysis: none; Meningitis: none; Headache: ⅓ of 1%; Pneumonia: ⅓ of 1%; Pulmonary atalectasis: 2%; Pulmonary infarct: ⅓ of 1%; Phlebitis: ⅓ of 1%; Sweating: 95%.

OBSERVATIONS

Many apparently absurd and meaningless warnings prevail regarding the technique of spinal anaesthesia, and some of these disregard the laws of physics.

1. Elevation of the foot of the bed for about 24 hours after operation appears to be almost universally practiced. This is largely empirical and is not essential, as the specific gravity of the injected spinal fluid in which the novocain crystals have been dissolved is necessarily greater than that of the fluid already in the canal, so by elevating the foot of the bed there is a tendency for the novocain to gravitate toward the brain; however, it is doubtful if this would cause harm as the location of the anaesthetic becomes "fixed" a few minutes after injection. We do not elevate the foot of the bed, and even place the patient in the Fowler position shortly after operation when this is indicated. Generally the patient's head is lowered 10 to 15 degrees to improve blood pressure slightly and to heighten the level of anaesthesia during operation, but he is placed in the ordinary dorsal position immediately after operation as this affords the greatest comfort.

2. Hyoscine hydrobromide (scopalamine) gr. 1/150 (H) and morphia gr. ¼ (H) is usually recommended as preoperative preparation. We tried this at first and had the alarming falls in blood pressure that have been so greatly feared. Then realizing that hyoscine hydrobromide per se "induces a rapid fall in blood pressure and collapse," (See "Useful Drugs" A. M. A.) this drug

was dicontinued and the alarming falls in blood pressure disappeared at the same time. Morphia gr. ¼ (H) is still given preoperatively.

3. Six cases of pulmonary atalectasis and one case of pneumonia occurred with the first fifty operations. We then began giving caffein sodium benzoate gr. III (H) 3/4 hr. before operation and gr. III (H) q 4 h for two doses after operation and *no pulmonary complications have since occurred*. The patients were also instructed to take deep breathing exercises about every half-hour during the remainder of the day of operation.

The administration of caffein to prevent pulmonary complications is considered the most important contribution in this paper, as we cannot learn of its being tried elsewhere, and pulmonary complications in the past have been even greater with spinal than with ether anaesthesia (See McKittrick, McClure and Sweet in "Surg., Gynec. and Obst.," April 1931). During spinal anaesthesia the body is thoroughly relaxed and this applies to the bases of the lungs which are in a condition of potential collapse, which is counteracted by the deep breathing exercises and by stimulating the circulation with caffein.

4. Neither low blood pressure, nor high blood pressure is a contraindication for spinal anaesthesia, as we find with hypotensive patients the fluctuations of the blood pressure are markedly less than with hypertensive patients. A trained surgical attendant records the blood pressure every three minutes, and if the systolic pressure falls to 100 then ¾ of a grain of ephedrine sulphate is given hypodermatically. This is required in about one-half of the cases—usually moderately hypertensive cases. Occasionally a few inhalations of aromatic spirits of ammonia are given until the ephedrine sulphate takes effect, and adrenalin chloride M. V to X was given to 2 or 3 cases. Oxygen and carbon-dioxide mixture is recommended for collapse, but this has not been required here, and we believe will never be required if caffein be given and the spinal fluid is injected as described in the next paragraph.

5. The technique of administration is very important. Frequently too much fluid is withdrawn, it is re-injected too forcefully, and too much mixing occurs in the spinal canal, thus causing an unreliable anaesthesia, gastric symptoms, or collapse. Best results are secured by withdrawal of about 1 cc. of spinal fluid, or enough to dissolve 100 to 200 mg. of novocain crystals—depending on the probable duration of the operation—and returning this to the spinal canal with very slight mixing—without working the plunger of the syringe back and forth more than is necessary for assurance that the needle is in the spinal canal—and injecting slowly so as not to force the anaesthetic fluid toward the brain. Patient lies on his right side and a gauge 20 or 22 spinal needle is employed. The sites of injection being between the 3d. and 4th. or between the 4th. and 5th. lumbar vertebrae.

6. With spinal anaesthesia remarkable relaxation of the abdominal viscera is secured, which enables the surgeon to examine the organs by sight rather than merely by palpation as when the intestines are distended with gas. Conditions are ideal for rapid surgery. A smaller incision is required. The patient is conscious and can be consulted at will. Post-operative gas pains are practically unknown. Shock is avoided. Less post-operative morphia is required. The recovery is more rapid. The patient is generally so much more comfortable that if he has previously taken ether he is surprised that he feels so well after spinal anaesthesia, and almost invariably declares that he will never have any other anaesthetic in case of another operation. The virtues of spinal anaesthesia are so firmly established in this hospital that we are never requested to administer any other type of anaesthesia.

CONCLUSION

Spinal anaesthesia is safe when a small amount of spinal fluid is withdrawn, the crystals of novocain dissolved, and the fluid returned to the spinal canal with slight or no appreciable mixing, and injected slowly—without force.

Elevation of the foot of the bed after operation is not necessary. Post-operative breathing exercises are important. It is very essential that caffein be given preoperatively and postoperatively to prevent pulmonary complications. Ephedrine sulphate should be used with selected cases. Hyoscine hydrobromide should never be used, or alarming falls in blood pressure and collapse may be expected. Adequate remedial measures exist for use in emergencies but these will not be required if reasonable care is exercised.

If the name "spinal anaesthesia" is displeasing it may be called "nerve block" for that is what it is in reality.

It is the anaesthetic of choice for all surgery below the diaphragm and its many advantages are shared about equally by the patient and the surgeon.

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HEMORRHOIDS, THEIR TREATMENT BY BOTH OPERATIVE AND INJECTION METHODS, AND THE RESULTS TO BE EXPECTED FOLLOWING THEIR TREATMENT*

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The study of the causes of rectal and anal diseases has been greatly neglected, likewise the treatment. The treatment for the majority of rectal conditions today is prescribed by the patient's druggist and by newspaper advertisements. This question always comes to my mind. Why do patients consult their druggist or follow the advice of most any advertising quack in preference to that of their medical advisor? Have they lost confidence in the medical profession, when it comes to the treatment of rectal diseases, or is it true that we never have acquired their confidence? It seems to me that the latter reason is the real reason that patients look to the use of patent and quack remedies for the treatment of rectal ailments. We have not given this subject enough attention, so that the patient is sufficiently impressed with our knowledge of his condition. In the first place, the majority of you, and myself also, did not receive any instruction while in school in the diagnosis and treatment of rectal diseases. We were taught how to make eye, ear, nose, and throat examinations, vaginal and pelvic examinations, neurological examinations. and many other diagnostic procedures, but we were not taught how to make a rectal examination. The only rectal case I ever saw examined digitally, while in school, was one that should not have been examined in that way. The patient had a perirectal abscess the size of an orange, which stood out like a toy balloon, and yet the instructor stressed how important it was that you should put the finger into the rectum. The examination produced excruciating pain and did not tell the attending man anything about the case that he could not see externally. If a patient comes to you and tells you that he has severe pain—excruciating pain—when his bowels move, or that the pain is constant and that he is afraid you will hurt him, see if you cannot make your diagnosis by the history and by inspection. It can be done in nearly all cases. Severely painful lesions are in the anal canal or external to it and can usually be demonstrated by careful palpation and inspection.

Now, to go back to my subject of hemorrhoids. The simplest classification is that of external and internal hemorrhoids. External hemorrhoids are below the ano-rectal line and usually consist of small varicosities or skin tags or acute thromboses. The physician is consulted for the acute thrombotic type most frequently. It consists of a subcutaneous hemorrhage varying in size from a wheat kernel to the size of a walnut, and they usually are bluish or black in color and are quite painful. This type of hemorrhoid belongs outside the grasp of the sphincter muscle and no attempt should be made to replace it within the anus, as by doing so new thromboses are often produced and the patient, instead of having a single pile, will have a complete rosette. What is the proper treatment of these if untreated surgically? The proper treatment depends entirely upon the size of the thrombosis. If the thrombosis is small, the size of a wheat kernel or a small pea, palliative treatment only should be used. This consists in the application of a soothing ointment, hot packs or hot sitz baths, and the use of mineral oil to keep the stool soft. Do not use suppositories since the lesion is external and suppositories are for medication within the rectum. In two or three days the pain subsides, and the patient is comfortable. If the pile is larger, it should be excised either by infiltration anaesthesia or by the use of ethyl chloride. Do not incise these tumors. Of the two methods I prefer the use of ethyl chloride because it is the quicker and easier, and there is no after pain. Infiltration anaesthesia with novocaine may be less painful at the time of the excision, but the pain one hour later, as the anaesthesia comes out, is often disappointing to the patient. As to the technique: After freezing the pile, lift it up with a tenaculum forcep or a hemostat and clip the entire swollen mass away with a pair of curved scissors. This excises all clots and leaves a clean incision which is packed lightly with a tiny strip of gauze. As a rule hemostasis is unnecessary and healing by primary union takes place in a week to ten days. When the freezing due to the ethyl chloride has disappeared, there is no further pain. A small thrombotic hemorrhoid is not excised since the soreness and pain due to its excision, and to its healing often causes more disability than would the presence of the small pile itself. What will happen if the large thrombosis is not excised? It may rupture spontaneously, it may become infected and form a fistula, or as usual the clot will become organized and leave a large fleshy skin tag. When you look at a patient and see a large number of fleshy external skin tags, you will know that he has had what he calls many "acute attacks" of piles. The skin tags were, at one time, external thromboses. And remember, when you see that a patient has a great many external skin tags, just put it down that he also has internal hemorrhoids. External thromboses and skin tags are all secondary to trouble within the anal canal.

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*Read before the Omaha-Douglas County Medical Society, January 12, 1932.

Now, as to internal hemorrhoids; these are above the ano-rectal line. They consist of varcosities in the superior hemorrhoidal veins and manifest themselves by bleeding and by prolapse of the rectal mucosa. Their etiology may be briefly defined as due to bowel irritation. Any irritative process in the colon will produce hemorrhoids. This irritation may manifest itself either by constipation or diarrhoea. Indiscretions in diet, intestinal infections, the excessive use of cathartics, all produce colon irritation and the result is a colitis, and with all colitises you will find rectal irritation; and with every case of hemorrhoids you will find a colitis. One should never promise a patient permanent relief of hemorrhoidal or rectal trouble by any method of treatment until you have corrected his colitis. The frequent reputed recurrence of hemorrhoids is probably due to their local treatment or removal without any recognition of the cause, which was a colitis, and which was left untreated. Also many patients have a single small external thrombotic pile removed and are told that they have had a hemorrhoid operation. This in the past has placed the status of the results of hemorrhoid operations in bad repute. So many patients will state that they have had a hemorrhoid operation at some previous date, and upon investigation you will find that someone has clipped off a sentinel pile or removed a small skin tag. The usual symptoms of internal hemorrhoids are bleeding, protrusion, aching and burning after stool, and sacral backache. Acute pain is not a symptom of hemorrhoids, but does occur frequently in the anal region as the result of thromboses, fissures, abscesses, and fistulae. But remember, the patient coming in complaining of severe rectal pain, usually has some other lesion than hemorrhoids. The one usual exception to this is the patient with a rosette of external thrombotics and several prolapsed internal hemorrhoids. Another symptom which the patients frequently mention is their inability to empty the bowel. They will tell you that they never feel that the bowel has completely emptied and that they have a great deal of trouble in keeping themselves clean. This simply means that the rectal mucosa has prolapsed into the anal canal, and that they are trying to expel it. The difficulty in cleansing themselves results from stool which is retained in the anal canal. The secondary symptoms of hemorrhoids are many, such as anaemia, constipation, headaches, neuritis, flatulency, and all of the symptoms that accompany a chronic colitis.

Treatment: This may be either palliative or curative. Palliative, of course, implies the tiding of the patient over the present attack. It usually should not be recommended because the patient is simply procrastinating. He wants to get by another time without having anything done. Exceptions are post-partum, and post-operative cases, and in severe constitutional diseases. If palliation is to be used, heat is the most efficient for relieving pain and inflammation. It is best used as the hot sitz bath, but in bedfast patients we must resort to the use of continuous hot packs. As a local application ointments are to be used instead of suppositories. Suppositories go up into the rectum and relieve pain only by virtue of some anodyne. This anodyne could better be given by mouth, since the insertion of a suppository often causes pain. An ointment containing cocaine or phenol may be applied externally and will give some relief. Usually aspirin by mouth will be more efficient than ointments locally. The bowel movements should be kept soft by the use of mineral oil, and a diet containing a soft bulk. The patient should be given plenty of soft bulky foods so as to produce a soft stool. No bran or psyllia seed should be given. Soups, cereals, custards, eggs, milk, and the usual soft diet, produces a hard dry stool. Give the patient foods which are all cooked, no raw fruits or salads being permitted. Give him spinach, cabbage, cauliflower, green beans, tomatoes, and such, these make a soft bulky but not a hard stool, and are much easier passed than a dry hard stool. In other words, treat his colitis.

Curative treatment: This consists of non-operative and operative treatment. The non-operative treatment used today is the injection method and is approved by such men as Terrell of Richmond, Virginia, Louis Hirschman of Detroit, F. C. Yeomans of New York City, Buie of Rochester, all Americans, and by Perrin, Gabriel, Miles, Sir Charles Gordon Watson, and Lockhart Mummery of England. These men are all ultra conservative and do not claim that the injection method is a cure all. More radical enthusiasts are Goldbacher of Philadelphia, Pruitt of Atlanta, Georgia, and Morely of London, who recommend the injection method for all types of hemorrhoids and rectal conditions. The injection method has been widely exploited in the past few years to the osteopaths by some doctor in Ohio. This man instructs any one, M. D., osteopath, or chiropractor, who has the fee to pay for instruction. These men are taught that almost all rectal diseases are cureable by injection treatments.

As to the history of the injection method, I will quote from Cooke's text of 1916. "The injection method is often referred to by foreign writers as the American method of treatment, a designation pleasing enough to its advocates, but containing little for gratification to those who condemn and reject it. There is no question that the method originated in the United States. Andrews, of Chicago, who investigated the early history of the method with great care, states that it was first employed by a young physician named Mitchell, of Clinton, Illinois, in 1871. The fame of the method spread rapidly through that section of the country, and within a few years was being used promiscuously by itinerant charlatans, not all of whom were members of the medical profession and many of whom were ignorant and irresponsible. Exploited in this way, it soon gained a wide reputation and thousands of patients were treated by the new plan, the secret of which was closely guarded.

"The fact that for so many years the treatment of this class of diseases remained largely in the hands of charlatans, in America at least, is directly attributable to the remarkable exploitation of this method at a time when the subject had been receiving little attenion at the hands of the regular profession. The present day interest in the treatment of hemorrhoids and in rectal diseases in general is probably due in no small measure to the ultimate realization by the profession that an important and profitable department of practice was passing from its hands.

"For many years physicians regarded the secret method with ouspoken contempt. With scarcely an exception, medical writers referred to it slightingly or condemned it and its users in the most sweeping terms. And the same attitude is maintained to a certain extent today, with the result that the method is still being successfully exploited in all parts of the country by no-knife advertisers, to the continual detriment and chagrin of the self-respecting profession. There is really no reason or excuse for the existence of such a state of affairs. The method is not and has not for many years been a secret. The profession should consider without prejudice whatever merits it may possess and so be in position to advise the public intelligently upon the subject."

This was written 15 years ago and strange to say, the profession's attitude has changed very little toward its use. The reason for their attitude is the result of the abuse of the method. The over enthusiasts recommend it for nearly all conditions, and the result is trouble, complications such as abscesses, sloughs, and severe hemorrhages.

The injection method has merits and should be used in properly selected cases, and this careful selection of cases with an approved technique is the secret, if any, of its use. As to selection of cases, Gabriel has found that cases fall into three groups: (1) The group that can certainly be cured easily and efficiently by a few high phenol injections. This group comprises the simple, uncomplicated internal piles, which are soft and reducible.

(2) The group that most certainly should *not* be treated by injection are the fibrous piles and polypi, and cases of enormous prolapsing piles, likewise the intero-external type of pile. Another contra-indication is the presence of an anal fissure with spasm of the sphincter, in such cases the fissure must be cured before beginning the injection treatment. Large external tags, fistulae, tumors, etc., are contra-indications.

(3) The third group is that in which one finds a ring of small vascular piles, with a general congested condition of the mucous membrane of the rectum and anal canal. This type is not ideal for injection, and unsatisfactory results will be obtained if it is used in these cases.

The solutions in common use are two—Phenol in Oil and a Quinine and Urea hydrochloride aqueous solution. The English physicians and the more radical American advocates employ Phenol in from 5 to 20% solution. The majority of Americans who are conservative in the use of the injection method are following Terrell's method. In 1913 Terrell, of Richmond, Virginia, began using quinine and urea solution to relieve post-operative pain. He was confronted with a hemorrhoidal condition in an elderly person whom he did not wish to operate and it occurred to him to infiltrate the peri-rectal tissue with quinine and urea solution to relieve the pain. Upon examination sometime later he found the hemorrhoidal condition was greatly improved, and from this experience he developed his technique for the injection of internal hemorrhoids. He first reported this method before the American Proctologic Society in 1916 at Detroit.

His ideas as to selection of cases is the same as that outlined by Gabriel. His technique consists of the injection of from 1 to 2 cc. of 5 to 10% quinine and urea into each hemorrhoidal area. This is done in the office without any anaesthesia of any kind and usually without any pain to the patient. The hemorrhoid to be injected is exposed by means of a suitable speculum and after cleansing the point to be injected, a needle is inserted into the hemorrhoid and enough solution is injected to distend the hemorrhoid which is usually from ½ to 1½ cc. There is a great deal of difference of opinion as to how many hemorrhoids should be injected at each sitting and as to the frequency of the injections. This, however, I think is a matter of judgement and experience. The number of treatments usually required is from 4 to 8 although some cases require many more.

The chief advantages of this method are: First: It can be used in the office. Second: It is practically painless and does not require any anaesthesia. Third: There is no disability or loss of time from work. Fourth: Hospitalization being unnecessary, it is of less expense to the patient. Fifth: With proper selection of cases and a good technique, the results are uniformly good.

The question then comes as to the permanency of the result. Personally, I do not feel that the result is as lasting as a well performed hemorrhoidectomy, but you will find that they who desire a non-operative method of treatment are satisfied with the result. I do think that unless the patient is carefully instructed as to the care of his bowel that he may have a recurrence in from 5 to 7 years or sometimes sooner.

Many of our patients go to the advertiser because we refuse to treat him unless he will consent to be operated. So why not adopt this principle. If I will not treat him by this method someone else will, and the injection method is one that any of you can use. If many skin tags are present, you should explain to the patient that this method of treatment will not remove these, and that they will still be present after treatment.

The operative method, of choice, is that described by Louis Hirschmann, of Detroit. Under sacral anaesthesia, the patient's sphincter relaxes, and gives a very good exposure of the hemorrhoidal field without forcible dilatation, which should never be necessary. The hemorrhoids are then tied off separately, at the upper pole and excised cleanly, leaving a small linear incision, which is parallel to the long axis of the bowel, and this does not produce any constriction. All of the hemorrhoids can usually be removed in three quadrants, namely, the right and left posterior quadrant and the right anterior quadrant. This is the usual distribution for the location of internal hemorrhoids. The external skin tags are excised with the internal hemorrhoids, and after their excision, you have a clean wound which heals completely in a week or ten days with a very good cosmetic result.

What are the results to be expected from a hemorrhoidectomy? First: The patient should have normal control. This is the question which is uppermost in nearly every patient's mind when he comes to you seeking relief for rectal trouble. He nearly always asks the question, "Is there any danger in this operation in me losing control?" You can definitely assure him that if the operation is properly done that there is no danger. Second: The anus should be normal in size after the operation and the bowel should empty easily and completely without the use of a cathartic. Third: The bowel should empty without producing any pain and there should be no bleeding. Lastly, but least important is a good cosmetic result. In order to regulate the bowel, it is necessary to see that the patient has been instructed correctly as to his diet, and if this is done, his colitis will be relieved. If his colitis is relieved, the patient will be relieved of his constipation, gas, his so-called stomach distress, abdominal distress, headaches, bilious attacks, neuritis, and many obscure symptoms which are due to a colitis.

The object of this paper has been to emphasize the actual disability which occurs with hemorrhoids, and to try and show you that by careful treatment of these cases you will obtain some very remarkable results.

DIAGNOSTIC AND THERAPEUTIC INJECTION OF THE SYMPATHETIC NERVOUS SYSTEM*

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The importance of the sympathetic nervous system in pain conduction must be recognized, as recent publications have demonstrated that pain fibers at least course through the sympathetic ganglia on their way to a terminal central point of perception. In spite of a clouded view of the anatomical and physiological mechanism of pain. clinical results are significant in giving the patient relief and, as in many phases of medicine, the surgeon has preceded the physiologist.

It will be only through a careful survey of experiences that a closer correlation of anatomical and physiological knowledge of pain pathways can be accomplished and it is hoped that a presentation of the following cases will contribute to this phase of therapeutics.

HISTORICAL SURVEY

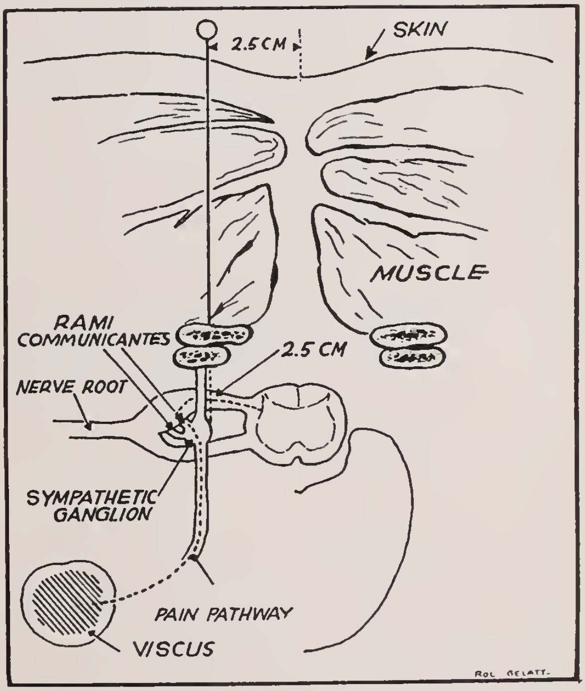
The observation of White that injection of the sympathetic ganglia with procaine hydrochloride was a satisfactory means of selecting cases for ganglionectomy was based on the anatomical studies of Langley, Edgeworth, Ransom, Jonesco, Enachesco, Braeucker and Kuntz and the physiological contribution of Cannon, Lewis and Britton and Singer and Spiegal. Later Mixter and White postulated the theory that pain fibers coursed along the blood vessels of the head and neck to enter the spinal cord through the inferior cervical and upper thoracic ganglia; also that pain pathways from the arm, chest, heart and upper abdominal viscera entered the cord through the thoracic sympathetic ganglia. Their view was based on the results achieved by Adson in relieving the pain of peripheral vascular disease in the upper extremities by cervico-thoracic ganglionectomy; the work of von Gaza, von Bogaert and Verbrugge, Archibald and Scrimger in which thoracic and abdominal pain was alleviated by sympathectomy and neuroramisectomy; also Swetlow's contributions to the relief of pain in angina pectoris by paravertebral alcohol block.

The practicability of nerve block for various painful conditions in the head, neck, thorax and abdomen was demonstrated by Woodbridge and Stern's method of injecting the lower dorsal and upper lumbar nerves for painful vascular conditions in the lower extremity, lent further impetus to this relatively safe means of combating intractable suffering. Since then, many workers have resorted to paravertebral injection either as a diagnostic or therapeutic measure with an increasing number of gratifying results.

(a) DIAGNOSTIC

The success of sympathetic ganglionectomy and ramisectomy is dependent upon careful selection of cases and we are indebted to Brown and Adson for the first means of determining suitable cases by the fever test. However, the objection to the use of typhoid vaccine is that it produces a generalized systemic reaction which, often, is quite severe and that it is not selective. The technique of White by which isolated ganglia can be injected seems more selective and does not produce a generalized systemic reaction. This technique was based on Labats method of injection and later was modified by Flothow.

The method of injection is as follows: The patient is placed in a prone position and needles are inserted 2.5 cm. lateral to the spinous process directly down until the point of the needle reaches the transverse process of the vertebra, then either above or below the transverse process to an additional depth of 2.5 cm. (Fig. 1). It is necessary to aspirate in order to insure against injecting fluid into a vessel. It is not possible to



Schematic drawing showing path of needle for injection of Sympathetic Ganglia.

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*From the Department of Neurological Surgery, Iowa Methodist Hospital.

enter the intervertebral foramen by this direct approach. Then 5 cc. of 1% novocaine are injected into the desired ganglia and observations are made on surface temperatures and relief of pain.

The following reports are quite typical of this means of selecting cases for sympathetic ganglionectomy and ramisectomy:

Case 1. Male, farmer, age 35, was referred to my service March 22, 1931, because of pain and gangrene of the distal phalanges of the first two fingers of the right hand. For a year the hand became blue and painful when exposed to the cold, and for eight weeks prior to admission the gangrene had been present. Examination was essentially negative except for diminished pulsations of the right radial and ulnar arteries and the discoloration of the right hand which was blue, clammy and cold. Surface temperature of the right hand and fingers was 30-o-C and of the left hand 34-o-C. On March 25, 1931, a novacaine injection of the right stellate and second thoracic sympathetic ganglia was performed. Immediately following the injection the hand became warm, dry and pink and the patient stated that he was comfortable for the first time in seven weeks. The surface temperature of the right hand was 35-o-C. A diagnosis of thrombo-angitis obliterans was made and cervico-thoracic sympathetic ganglionectomy and ramisectomy was advised, because of pain relief and obvious improvement in the circulation which was evidenced by the color change and 5-o-C. rise in surface temperature. On March 26, 1931, a right cervico-thoracic sympathectomy was carried out, and the post operative temperature of the right hand was 35-6-o-C.

Case 2. Male, plumber, age 35, was referred to my service July 12, 1931, because of a history of painful, cold, clammy hands and feet for a period of four years. The symptoms were exaggerated when he was exposed to the cold or became nervous. Examination was essentially negative and there was no evidence of diminished pulsation of any of the peripheral arteries. Because the symptoms in the upper extremities were most pronounced it was decided to perform a novocaine injection of the stellate and second thoracic sympathetic ganglia. Prior to the injection the surface temperature of the hands were 26-o-C. and immediately after the injection the temperatures were 33-o-C. in the left hand, and 34-o-C. in the right hand. The diagnosis was Raynaud's disease, and on July 15, 1931, a bilateral cervico-thoracic sympathetic ganglionectomy and ramisectomy was performed. The hands were free from pain, warm, dry and pink and the surface .temperatures were 35-o-C. in both hands.

Case 3. Male, farmer, age 45, was referred to my service July 15, 1931, because of blue, clammy, painful feet. The pain was aggravated by exposure to the cold and on exertion. Examination was essentially negative except for a blood pressure of 165/100 mm. of mercury and diminished pulsations in both dorsal pedis and posterior tibial arteries. There was some evidence of sclerosis of the peripheral arteries and the surface temperatures of the feet were 29-o-C. On July 16, 1931, a novocaine injection of the 12th dorsal. 1st, 2nd and 3rd, lumbar sympathetic ganglia was performed. There was relief of pain but the surface temperatures only increased to 30-o-C. A diagnosis of occlusive arterio sclerotic disease was made and it was felt that sympathectomy would be of little avail in increasing the circulation of the lower extremities.

The above cases illustrate the means of selecting cases for surgery and with the accurate surface temperature readings a definite indication of relative blood volume increase can be obtained. The Tycos dermatherm has been used to determine the surface temperatures.

(b) THERAPEUTIC

In view of recent investigations it seemed justifiable to perform alcohol injection of the sympathetic ganglia in cases which were in such poor general health that as drastic a procedure as sympathectomy was contraindicated. The technique of alcohol injection is the same as in the diagnostic procedure except that 4 c.c. of 95% alcohol are added after the novocaine is injected.

The following case reports will illustrate the indications for injection and the results achieved:

Case 1. Male, farmer, 72 years of age, was referred to my service June 28, 1931, because of left trigeminal neuralgia of fourteen years' duration. He had received twelve deep alcohol injections of the fifth nerve with an average relief from pain for a year after each injection. However the last injection had failed to stop the pain, so on June 30, 1931, a section of the postganglionic sensory root of the fifth cranial nerve was performed. At the time of the operation the ganglion and posterior root was noted to be very adherent and I feared that all of the sensory fibers had not been divided. However there was anesthesia in all three branches of the nerve and he was free from pain for two months but then had a recurrence in the first and second branches. Because of the adhesions I again explored the ganglion and posterior root but found the fibers to be satisfactorily divided. Again he obtained relief for six weeks but returned complaining of pain in the left eye when the left nostril was touched. Cocainization of the left sphenopalatine ganglion immediately stopped the pain. I felt that the pain was of sympathetic origin, so on Sept. 29, 1931, an alcohol injection of the left stellate ganglion was performed. There was a Horner's syndrome following the injection but the patient has had complete relief from pain.

This case illustrates the role that the sympathetic fibers play in conduction of painful impulses from the head because. in spite of satisfactory division of the trigeminal nerve root, the pain remained. However the pain after operation was not the same "tic like" pain that had originally disturbed him.

Case 2. Male, railroad fireman, 35 years of age, was referred to my service August 30, 1930, because of a brachial plexus injury August, 1929. At the time of admission he had a paralysis of the left arm. with atrophy of the forearm and hand; also an anesthesia of all the branches of the brachial plexus. The patient suffered a constant burning pain in the left hand and repeatedly begged to have the forearm amputated. On September 30, 1930, the left brachial plexus was explored and the roots were injected with alcohol, also a periarterial sympathectomy was performed on the subclavian artery, at the same time Dr. Phil Watters amputated the arm at the upper third. Following the operation the patient complained more bitterly than ever of pain in the phantom hand. On July 7, 1931, an alcohol injection of the stellate and second thoracic sympathetic ganglia was performed and the pain was immediately relieved. However in the past two months he has had some pain in the phantom thumb and forefinger but estimates a 75% relief of pain. The patient has been advised to have another injection and is willing to submit to this procedure because of the comfort afforded by the previous blocking of the nerves.

This case is illustrative of the pain phenomenon in the upper extremity and the result is gratifying because prior to the injection the patient had threatened suicide, but now he states that life is worth living.

Case 3. Housewife, age 55, was referred to my service October 16, 1931, because of intractable pain in the right upper abdominal quadrant of twenty years' duration. She had submitted to five adominal explorations in which various procedures had been carried out on the gallbladder and bile ducts. She had been using morphine to allay the pain but was very desirous of obtaining relief without resorting to drugs. On October 18, 1931, an alcohol injection of the right eighth, ninth, tenth and eleventh dorsal sympathetic ganglia was performed and she obtained immediate relief from pain. Since the injection she has suffered from pain but one day and is free from narcotics.

This case illustrates the pain conduction pathways in reference to visceral pain.

Case 4. Housewife, age 61, was referred to my service October 22, 1931, because of intractable pain from arterio sclerotic gangrene of the right great toe. The patient had suffered from diabetes for a number of years and in the previous three weeks had been in extreme pain from the impaired circulation to the foot. Because of her poor general condition it was felt justifiable to block the lumbar sympathetic ganglia in the hopes of relieving her pain until she would be in better condition to undergo amputation of the limb. On October 24, 1931, an alcohol injection of the right twelfth dorsal, first, second, third and fourth lumbar ganglia was carried out with relief of pain until her death three weeks later from general sepsis. The surface temperatures of the right foot before and after injection was 29-o-C.

This case is indicative of pain pathways from the lower extremities and although there was no hope of increasing the blood volume the patient was made comfortable with no appreciable risk.

SUMMARY

A few typical case reports are given in hopes of illustrating the importance of the sympathetic nervous system in pain conduction and also in the hope that further investigations will throw additional light on a group of patients who, heretofore, have been regarded as being beyond help.

The cases of paravertebral injection for angina pectoris have been omitted from this paper because in a separate article this phase of pain relief is more fully discussed.

The risk of alcohol and novocaine injection for diagnosis or therapeutics is negligible in skilled hands and opens a field which is relatively unexplored.

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REPORT OF DELEGATE TO A. M. A. CONGRESS ON MEDICAL EDUCATION AND HOSPITALS

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Our national organization, the American Medical Association, has always been one of action and accomplishment, with little building of material monuments. Even at mature age, this institution, the largest of its kind in the world, is housed in a most modest home. Those of you who have visited 535 North Dearborn Street, at Chicago, Illinois, will bear me out in this comparison. It would seem that from the very beginning of this organization accomplishment has been its watchword.

The early efforts naturally ran to the perfecting of a central organization and the development of the many state component parts. This took a great deal of time. The idealistic vision of all leaders has been scientific medicine in the largest sense. For a long time other schools of medicine existed, and there was good in each of them. William Osler says that Hahneman was one of the great men of his time. Osler says that if Hahnemann accomplished nothing else by homeopathy than to correct over-dosing with strong medicine, which was then a tendency, he accomplished a great thing for the medical world. But greater than all of them was "Scientific Medicine," and the A. M. A. leaders have held a steady focus on this big idea. Indeed so concentrated has been the effort to produce scientific medical service and practice, that today we feel the economic and socialistic sides have been neglected.

In the closing decades of the last century, with the maturing of the work of such men as Koch and Pasteur, and others, the stage was found set for a rapid development in the fundamental sciences. Then followed the quick application of these fundamental branches in our country, by such clinicians as Osler, Senn and Murphy. Clinical medicine grew rapidly. The laboratory and the hospital bed took the place of the preceptorship and the lecture room of the old-time medical college.

You are familiar with the growth, indeed the over-growth, of the medical colleges, of good, bad, and indifferent kinds. The same rapid growth in the number and the quality of hospitals occurred, and in the last decade there has been almost an epidemic in the birth of Federal Hospitals. Training schools, in like manner, have come too rapidly into existence, and the graphic chart showing the number of graduating nurses by years has reached almost a vertical line. Laboratories in radiology, clinical diagnosis and physiotherapy, etc., have appeared by the thousands in this practical application of scientific medicine.

Throughout all of this period, the stabilizing influence of the A. M. A. has been apparent. Its tasks have grown to such a magnitude and to have such a diversity of purpose, that it is indeed a complex organization. In its earlier years, mostly voluntary effort was used; but it has become necessary to assign the tasks to various bureaus and councils, each under secretarial management. About thirty years ago the Council of Medical Education and Hospitals came into existence, with a fairly definite task of attempting to standardize the teaching of medicine. You are familiar with the long list of accomplishments of this council. One needs only to mention such as,

The standardization of American Medical Colleges;
The progressive adjustment of curricula in these schools;
The requirement of and the follow-up on internships (eighteen states now require certificate of internship service in an accredited hospital to take State Board);
The accrediting of hospitals in U. S. A. for training interns;
The advancement of standards of the state and national licensing boards;
Regulatory supervision of laboratories — where much technical work prevails; and
The attempt to establish post-graduate work for practitioners.

This brief review of accomplishments in a single council of the A. M. A. shows one outstanding objective, viz., scientific medical service. And yet this is but a single department of the Association. This same objective is seen in even greater evidence in the annual scientific meeting and the journals representing the several divisions.

It is only in very recent years that we have come to appreciate that with the rapid and efficient advance of the scientific side there has been a relative neglect of the economic and socialistic side of the problem. The United States Public Health Department suggested this neglect, and later it has threatened the medical organizations. State medicine has slipped upon us in the form of labor compensation regulations; various institutionalized clinics; public school treatment of children; municipal, county, state and federal hospital services, and in many other forms.

The Council on Medical Education has reacted to this by giving impetus to the five year survey of the cost of the care of the sick; by the publication and circulation of the journal *Hygeia;* by organizing certain teaching exhibits; by lending influence in legislative matters; by the study of Institutionalized Practice and Industrial Medicine, and by urging better organization in its state and county component societies.

ECONOMICS—THE WATCHWORD

This year at the meeting in February at Chicago one might say the "watchword" of the whole program was Medical Economics. This you will readily see when I quote the following subjects of important papers read and discussed during the ten sessions of the program:

The Fundamental Place of the Hospital in the Practice of Medicine.
Is the Medical Profession Over-crowded?
Some Economic Considerations Influencing the Future of the Practice of Medicine.
The advantages of Complete State Care for Mental Cases.
The Control of Medical Specialties.
Care of the Veteran from Various Standpoints.
Corporate and Contract Practice.
Discipline of Licensed Practitioners.

Dr. Ray Lyman Wilbur opened the session with a paper on "The Fundamental Place of the Hospital." Some of the high points of his paper were, first, that the government has already gone too far in hospital building. That today there are three billion dollars invested in all hospitals in the United States of America. It costs 200 million dollars annually to rebuild, improve and supply these, without increasing the bed capacity. This probably means as in many other procedures in the U. S. A., an over-rapid conversion of our natural resources into liquid capital. Dr. Wilbur says:

> "Literally hundreds of thousands of our citizens, young and old, are now in institutions where they must have food, shelter, protection, and medical care. This is an enormous financial burden spread over the church, the universities, private groups, and the municipal, county, state, and federal government. It is impossible for them to run to a financial profit. As a business, the ordinary hospital is a failure. As an instrument of human service, it is a striking success.
>
> "Recent economic changes have brought us up with a sharp start to realize that the indispensable hospital stands now financially in between the patient and the doctor, and that some system of handling both the operation of the hospital and of medicine is required if we are to maintain the best that the medical profession has to offer to us all.
>
> "The hospital is fundamental in medical care, medical education and modern economics. The growth of the hospital system must not be distorted by special pleading and pressure to such a degree that it controls the future of the practice of medicine. The doctor's and the patient's relationship must be the real nucleus, the hospital merely the arena of action. The shell must not be stronger than the kernel. It is as vital to our ultimate success and happiness to keep the controlling hand of the self-seeking politician out of our hospital system as it is to keep it out of our school system."

Again, the survey of the cost of the care of the sick is just now ending. This year will probably see a summary of the work and the beginning of attempts to project its conclusions upon the community at large. This most certainly will involve the medical doctors now practicing. Will we have any organization set up to meet it and direct it in avenues which your experience best knows? I fear not.

The projection of the White House Child Welfare Work in Nebraska is a good illustration. Last month just five or you were present at their last meeting, but there were one hundred twenty-five lay women and a few lay men there. This was the third meeting in as many months. It was a strange and interesting meeting. No one seemed just sure what it was all about or, "where do we go from here?" But fifty per cent of the ideas getting under way were more medical than otherwise and needed far more medical minded direction than lay control. With proper medical guidance, I am sure the lay minded energy there present in such dynamic abundance would not go far astray. Without it, many mistakes are likely.

Meyerding, of Minnesota State Medical Society, says:

> "The medical profession today is in a position where organization is their only salvation if they desire to retain any of their independence and individuality. Our social evolution has made it necessary for all groups contacting society that they must be organized, and this organization has become extremely complicated. Someone who is familiar, at least more familiar than the average medical man is, with public attitude and opinions, must have charge of the administration of these contacts of the medical profession. Usually this man is called 'Executive Secretary', 'Managing Director', or some term of that sort."

All of these activities are crying out in the Nebraska State Medical Association for full-time secretarial management. Last year your committee on Medical Education suggested it and again we urge you to direct your delegates and councilmen to study the plan in looking to the future. Fourteen of our sister states already have a full-time manager with all state medical association work centralized in one office. Of this system Olin West says, "no state medical association that has employed a full-time secretary has ever abandoned the plan."

Since these needs for centralization of organization exist, since greater centralization is recommended by such leaders as Olin West, and since fourteen other states are using the full-time secretary's office with added success, is it not time for Nebraska to consider the possibility, financially and otherwise, of the adoption of a similar plan?

Another phase of medical economics presented at the February Council appeared under the topic, "Is the Medical Profession Over-Crowded?" The answer was inclined to the negative. The high standards and strict control of registrations in medical schools have prevented the rapid over-supply of M. D. graduates such as has occurred for graduate nurses in the past decade. Dr. C. C. Bass, of Tulane University, who read this paper, gave figures pertaining to earnings of specialists and general practitioners and to the number of M. D.'s per thousand of people. These also showed the medical profession not especially over-crowded.

Bardean, of Wisconsin, suggests that this Council interest itself in the standardization of training schools for nurses, to the end that the supply come nearer the demand. It was noted that no other professional education had so long been offered with pay, while the student was in training. Further, that non-medical hospital boards had probably found training schools profitable, else many would have been discontinued long ago.

Hugh Cabot's presentation dealt very largely with economic phases of modern practice. He emphasized the rapidity with which things happened today. As much can happen in a decade now as in a life span in olden times. Our ability to keep pace with these economic changes has been very difficult as compared with our ability to keep up in scientific medicine. We have had an abundance of scientific training and scientific meetings, with far too little economic training and consideration.

He emphasized how public health insurance was extremely likely to be thrown into political control and at best would be a political football.

He offered group practice in various forms as an economy in medical practice. He used student health service in universities and certain private organizations to illustrate how group practice has functioned well economically and scientifically. Group practice has been well tried and the public has already accepted it in its better forms.

One discussionist emphasized how changes come in most economic and political affairs, by (1) evolution; or by (2) revolution. He thought the evolutionary way was far better in this case. To this end he made certain suggestions. He believed the old rule of the general practitioner taking care of 90 per cent of the sick folks would remain in effect. He thought that if the doctor would cull out most of the technicians and do the work himself, it would cure most of the doctor's ills today.

CONTRACT PRACTICE

Contract practice was discussed by Leland, the director of the Bureau of Medical Economics of the A. M. A. It has some justification. It has evils for the patieint and for the doctor.

Contract practice assumes three different phases:

(1) That where the injury occurs to the employed;
(2) That where the injury or illness occurs to the employed; and
(3) That where the injury or illness occurs to the family of the employed or to those assured of medical service by contract hire.

The A. M. A. recognizes that a contract practice is necessary in certain instances, but it stresses the importance of keeping in mind first of all the welfare and the care of the patient. Contract practice has gone too far already. It lowers the economic standard, lowers the standard of the medical profession, and for the most part is profitable only to the promoters and not to the patient or to the medical profession.

PRACTICE OF MEDICINE BY CORPORATIONS

Mr. Davis, of the Rosenwald Fund, preluded a paper on this subject by saying that this was illegal and that the corporations were not trained to practice medicine, therefore it was impossible for them to practice medicine. Like many other impossible things of today, it is nevertheless occurring in certain instances.

Hospitals are institutions with lay groups back of them, and they are incorporated to function and care for the sick and injured. In many cases where there is a closed staff, it certainly seems that the hospital comes very near to the practice of medicine. In the United States, in the large cities there are many places where fifty per cent of the doctors have no opportunity whatever to take their patients into the hospital as their own. The legal status of a hospital is that they are not practicing for profit, and that the staff is responsible for the real practice, therefore the hospital is not practicing. In this country there are about two thousand hospitals not of this type, but which are proprietary in character, being owned and operated by a group of doctors and are operated for profit. These two thousand hospitals are mostly small and represent only ten per cent of all the hospital beds in the seven thousand hospitals in the United States at present. Their status legally is somewhat different, and yet even here the staff has the legal responsibility.

He gave a good illustration of where a corporation almost practices medicine; that is. the case of the University Student Clinic. Even here, legally speaking, the responsibility is that of the practitioner hired by the State or the University. In a good many places, Life Saving Institutes, Health Service Clinics, etc., are organized by lay direction and hired doctors. with profit to the organizer as the chief motive. These furnish the best illustration of lay organization coming harmfully between the patient and the doctor. In Oregon, one county medical society has tried to set up an organization to meet such competition. In California the State Medical Association has proposed to set up in various county medical societies, machinery to compete with these groups and clinics, but so far it has not worked out well.

The essayist was satisfied in his own mind that these institutions or groups were not really legally practicing medicine. However, that was a matter of no great importance. The real question is, "What is to be done about it?" It is a vital economic question, even if not a legal question. He doubts very much if the county medical societies are cohesive enough to ever succeed. He thinks that the medical profession must more carefully study the economic situation, and he insists that the medical service must continue to be good and to represent close contact between the doctor and the patient, and believes that in the end the proper changes in rates or charges will come about from changes in economic conditions outside of the profession itself. He believes that it is unfortunate for the profession to continue to assume the position of opposition It seems to be a question of evolution or revolution, and he believes that the use of evolution is better, but that we should hurry.

Dr. Fishbein discussed this in his rapid fire way. He said that legally, these set-ups or organizations might not be practicing medicine, but practically they were practicing medicine. and referred to the Life Saving Institute as one such menace. He also referred to one professor who was hired by a university hospital for $15,000 annual salary, and this professor did about $126,000 worth of surgery which was collected for. I have no doubt he referred to Cabot, at Michigan. He asked this question: "Which will the public have; the practitioner for the patient, or some sort of a go-between institution delivering medical practice?" He pointed out how true it is that a law of any kind is absolutely no good if it is not backed up by public opinion. Therefore, it is a matter of public education. What does the public really want? He believes that the public still wants the general practitioner to have direct contact with the patient and that on the basis of the general practitioner taking care of 90 per cent of the people, this method should prevail and let the ten per cent be the element for experimentation.

It is impossible in a fifteen minute report like this to do more than call your attention to the Congress and a few of its interesting proceedings. It approaches embarrassment to reappear year after year only to repeat a bit of the splendid advance sentiment which eminates from these congresses. Yet it is my task as I see it. Should this summary create in many of the Nebraska State Medical members, an interest to induce them to read for themselves the full report of The Council on Medical Education and Hospitals, then I will have succeeded well indeed. Many well-thought-out judgments emanate from the Council and I assure you good value for time spent will be yours, if you will read the fuller reports.

May I take this opportunity to thank you for the honor which I again so gladly claimed in representing the Nebraska State Medical Association at this 1932 Council.

WEELUM ON THE AULT FASHION MITHER

Noo days when a lady is ga'in to hae a baby, she has tae hae a hospital, a nurse, an operatin' room, an anesthetist, a barber an' ither flunkies beside th' doctor. But ah mind th' nicht when a mither gat oop against ma orders an' gi'ed me a haund tae wash an' dress the bairn, then washed hesel and gat back intil a clean fresh bed where we snuggled her awa wi' th' bairn at her bosom. Then she patted me an th' airm, an' kin' o' shy like, whispered that th' monie wis hidden awa ahint th' clock. MON! bit there's a lot o' ye chaps th' noo, wha wid wash an' dress twa babies tae hae a young mither pat ye on th' airm—especially if she telt ye where th' money was.—Ah weel,—Guid Nicht.—*Journal Mich. State Med. Soc.*

EARLY SURGEONS AND SURGICAL OPERATIONS IN NEBRASKA*

H. WINNETT ORR, M. D.,
Lincoln, Nebraska.

Dr. George L. Miller, later editor of the Omaha World-Herald, was the first physician to practice in Omaha. He arrived in November, 1854.

One of the outstanding early services of the surgical members of the profession was their participation in the military activities during the Civil War. Dr. Enos Lowe was receiver of public moneys at Council Bluffs in 1854 when Omaha was founded. He was mentioned as one of the surgeons of the 1st Nebraska Infantry in 1862 but the official roster of the First Nebraska gives Dr. Wm. McClelland of Omaha, as Chief Surgeon. He served from 1862-1866. His assistants were Dr. N. B. Larsh of Nebraska City and Dr. G. W. Wilkinson of Omaha. The 2nd Nebraska Cavalry organized later had Dr. A. Bowen as Chief Surgeon and Dr. W. S. Latta of Plattsmouth and later of Lincoln and Dr. H. O. Hanna as assistants.

The first meeting at which steps were taken for the organization of the present Nebraska State Medical Society was held in the office of Dr. Peabody in Omaha on May 11, 1868. As a result of this meeting a circular was sent out to the profession of the state signed by Dr. Monell as chairman, and a second meeting which was a formal convention, assembled in Good Templar's hall in Omaha on June 24th of the same year. This is spoken of because several of the men most active in this organization, now sixty years ago, were the early surgeons of Nebraska. Drs. Monell, Peabody, and Mercer of Omaha; Livingston and Black of Plattsmouth; Larsh and Renner of Otoe county, and others who did some of the early surgical work in Nebraska, were members of the group that founded the Nebraska State Medical Association.

A previous Nebraska Medical Society had been incorporated in March, 1855, and a reorganization attempted in 1857, but neither of these societies survived.

At the first formal meeting of the Nebraska Society which was held in Nebraska City in June of the following year, that is, in 1869, other names which appear in the early surgery of this state were found upon the roster. These were Dr. McClelland of Omaha, Dr. Tingley of Lancaster county, Dr. Coffman of Omaha, Dr. Hershey, Nebraska City; Dr. Renner of Nebraska City, and others. A historical report upon the surgery of Nebraska was presented at this first meeting; the report having been formulated by Dr. Mercer and by Dr. Larsh. It was the first report on surgery in Nebraska and it is interesting to note that the reporters introduced their remarks by saying, "Fifteen years ago our present productive state was a vast prairie, occupied only by the native Indians, with here and there an emigrant train crossing the plains to the gold fields of the west." They call attention to the fact that at that time (fifteen years before), the Indians occupied a wild territory of three hundred and thirty-five thousand square miles in which there was a white population of only about nine thousand, or one to every thirty-seven square miles of territory.

Before his connection with the Federal Army in the Civil War, Dr. McClelland and Dr. Peck had accompanied General Thayer on his campaign against the Indians in the so-called "Pawnee War". General Estabrook wrote a poem of thirteen verses about the campaign in one of the verses of which Drs. McClelland and Peck are duly mentioned.

The first surgical case reported in the surgical report of 1869 by Drs. Monell and Larsh was that of a gunshot wound of the humerus. There was a compound fracture of the upper arm in which union did not occur. The patient was afterwards removed to Chicago and was operated upon by Dr. Brainard. This was in 1854, and had been treated in the first instance by Dr. George L. Miller of Omaha. A case of a double popliteal aneurism was reported to have been cured by pressure, in Omaha, in 1857, by Drs. Seymour and Monell.

Throughout all the early years of Nebraska history the leading surgeons of this district were connected with the care of men injured in the construction of our railroads. The first to arrive was the Union Pacific, and with the construction of this road a new era in the surgery of Nebraska was begun. In the same surgical report carbolic acid is referred to as a recently discovered local application for infected wounds. The writers say, "In these cases it not only acts as a disinfectant but it arrests molecular decomposition and stimulates healthy granulation." It is interesting now to observe that one of the resolutions adopted at the first meeting was a resolution of thanks to the Council Bluffs and St. Joe Railroad Company and to the Union Pacific Company for passing delegates to and from this convention at half fare. At the second meeting of the society in Omaha in 1870, three different cases were reported in some detail in which the surgical condition was the result of attacks by Indians. One was an employee of the Union Pacific Railroad, reported to Dr. R. C. Moore of Omaha, who was attacked and scalped by Cheyenne Indians in August. 1867. Dr. Moore treated this man by Olive oil and surgeon's lint dressings only, with changes only to clean the wound and he made a good recovery in about three months.

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*Read before the Lancaster County Medical Society, Oct. 6. 1931.

In one of the chronicles, however, it is reported that while the scalp wound healed the man was subject to giddiness and periods of mental derangement. The section of the scalp was tanned at the time and preserved as a souvenir by the patient. Later, upon his departure from Omaha, he presented the specimen to Dr. Moore and for a time at least it was in an Omaha museum.

Dr. Peabody reported a soldier of the 2nd Nebraska Cavalry who was wounded by Sioux Indians on the 22nd of June, 1863. He had been shot by an arrow and the head was lodged in the upper portion of the right lung. Dr. Peabody had the courage to expore the sinus, locate the arrow head and by enlarging the fistulous opening, was successful in removing this foreign body from the lung. The man made a speedy and rapid recovery.

Dr. Peabody, at the same time, reported a case of a woman who had been shot accidentally through the abdomen at a time when she was two months pregnant. The bullet penerated the stomach and lodged in the muscles of the back. Dr. Peabody treated her without probing and by simple applications to the wound of entrance of the bullet and after five days had the satisfaction of seeing her rapidly improve and make a complete recovery. The young woman was twenty-one years old and was delivered at the end of her nine months pregnancy of a healthy child, without complications of any kind.

Dr. Samuel D. Mercer was one of the early and enterprising surgeons of Omaha. He came there in 1866 and was one of the first contributors to the medical literature of the state. I have in my library a small volume by him on Spinal Curvature, published in 1878. He was the organizer of the Omaha Medical College.

To indicate that political questions invaded the society even in those early days, it is interesting to observe that at this second meeting on May 6, 1870, a resolution brought in from somewhere declared Dr. Horace Wells of Boston to be the discoverer of anesthesia. At the fourth meeting of the society in 1872, Dr. Hershey reported a compound Potts fracture with Dr. N. B. Larsh as the patient. Dr. Larsh was thrown from a wagon and directed the reduction of the fracture before removing his shoe. When the shoe and stocking were removed a small wound was found communicating with the malleolus but the ankle fracture and dislocation had to some extent been corrected. He was treated by sand bags and ice and made a satisfactory recovery without ankylosis.

At the second meeting in 1870, when the society was called to order by the president, Dr. Peabody, at eight o'clock in the evening of the first day, a basket of wine was presented to the chairman with the compliments of Moody and Blair. druggists, of 12th Street. After the supper, on motion of Dr. Coffman, a resolution of thanks was passed to Dr. Mathewson for the entertainment, and to Moody and Blair for their complimentary recognition of the society.

At the fifth annual meeting of the Nebraska State Medical Society in Nebraska City, Dr. Robbins of Nebraska City presented two interesting cases. The first was that of a woman aged thirty-two, who had an extra-uterine pregnancy. The case was one of peculiar interest because an ovarian pregnancy having been diagnosed, she was operated upon in February, 1864, and through an incision in the abdominal wall the head of the fetus was removed but not the remainder. This operation was done in Kentucky. She later came west and came under the care of Dr. Robbins who found her suffering extremely with abdominal pain and distress. She was having a sort of labor pains and was expelling through the vagina portions of the fetus which she had been carrying since the time of previous operation. The patient remained very sick for some time but gradually the contents of the cavity were discharged and after some weeks the cavity seemed to empty entirely and she gradually recovered, having been delivered spontaneously through the vagina by rupture of the sac from the broad ligament.

Dr. Robbins reported a somewhat similar case which had occurred in his practice during the past year in which a blighted fetus was finally discharged spontaneously after nine months in a similar manner.

Dr. A. S. von Mansfelde was sent from Chicago by Dr. Moses Gunn in 1875. Dr. von

Mansfelde had been a pupil of Dr. Gunn and was sent out to Nebraska to take care of a surgical patient. He decided to locate in Lincoln but after two years removed to Ashland where he located "Quality Hill" which he operated as a private hospital for many years. Mrs. von Mansfelde acted as anesthetist and an assistant who later became the second Mrs. von Mansfelde as his assistant in a long series of major surgical cases. One of the souvenirs in our library is an instrument set which Dr. Moses Gunn gave to Dr. von Mansfelde and which had been used in the Civil War. Dr. von Mansfelde's valuable library, including many periodicals and his own lecture notes on Pathology, Clinical Surgery and Ethics are housed in the Lancaster County Rooms.

To pass over a few years and come to the city of Lincoln some of the early experiences of Lincoln surgeons should be recounted. A point of history which is of interest is that at a meeting of the Lincoln Society at the office of Dr. Lane on April 28, 1887, the special order of business was to elect delegates to the State Medical Society and to elect a committee to confer with the committee from the City Council on the subject of a City Hospital. This call for meeting was signed by Dr. H. B. Lowry, Dr. Milton Lane, and Dr. N. J. Beachley. Dr. Lowry was the principal speaker and advocated that steps should be taken toward the securing of a City Hospital at that time.

At the meeeting in May, 1887, Dr. H. C. Demaree, who, with his wife. also a doctor, resided until a few years ago at Roca, Nebraska, read one of the early surgical papers on a Fibroid Tumor of the Uterus Complicating Pregnancy. The records do not tell us the kind of care this patient received but do record the fact that she made a good recovery.

Apparently the first orthopedic case read and discussed in our society was one presented by Dr. Charlotte Norton at the meeting of May 8, 1888. Dr. Norton reported a case of spina bifida and talipes calcaneus which died on the tenth day after a severe hemorrhage. She gave a description of the cause of spina bifida and quoted such authorities as Sir Astley Cooper and Erickson as to etiology and treatment. The concensus of opinion of those participating in the discussion seemed to be that such patients were at least partially influenced by a scrofulous diathesis in the mother. But one of the speakers said, as I have heard since that time, that he thought it a wise dispensation of a beneficent providence that such patients usually died young.

An interesting sidelight upon the surgical situation in Lincoln at that time is given by a prolonged discussion in the society over the appointment of Drs. M. H. Everett and J. R. Haggard as Burlington surgeons at this place. Exception was taken to their appointment because they had been charged with unethical consultation with irregular practitioners. Dr. Livingston of Plattsmouth, however, who was chief surgeon for the Burlington seems to have successfully smoothed out the difficulties because we find, shortly after, both Dr. Everett and Dr. Haggard taking part not only in the work of the Burlington Railroad but of the Lincoln Society as though nothing had happened.

Dr. Hart. with whom Dr. Everett was associated when he first came here and who preceded him as Burlington physician, came to Lincoln in 1881.

At the meeting in 1888 when Dr. H. J. Winnett, Dr. M. H. Everett and Dr. E. L. Holyoke were elected to membership, Dr. Crim, a recent arrival in Lincoln wrote a voluntary paper on Sarcoma, illustrating the different varieties by microscopic specimens, and Dr. Mitchell read the paper of the evening on Diseases of Joints, speaking particularly of punctured and incised wounds. An interesting sidelight upon the affairs of the society about that time is indicated by the treasurer's report in December. 1889. The report shows the year's expenditure of $19.00; receipts $19.00; fines remaining unpaid $8.00; bills due $11.00.

During about the time from 1888 to 1890, Dr. M. H. Everett began reporting of a series of surgical cases. At a meeting in 1890 Dr. Everett reported a case of fracture of the femur. He was doing the work for the Burlington Railroad at this time and continued to do so for many years. At the meeting following he reported also fractures of the tibia and fibula, one of osteotomy, and one of double Colles fracture. The minutes of the society record that these two cases evinced excellent care on the part of Dr. Everett.

It was as recently as 1892, only 39 years ago, that the first appendectomy north of the Platte and outside of Omaha was done by Dr. F. A. Long of Madison. The patient was a sixteen year old girl and the operation was done in her home with milk crocks for surgical basins and she made a good recovery.

At the meeting of January 8, 1895, Dr. Everett presented a case in which he had performed the operation of removing the pylorus and had done a gastroenterostomy using a Murphy button.

In March, 1895, Dr. J. O. Dawson read a paper on carcinoma of uterus and reported a case on which he had performed a vaginal hysterectomy. His specimens were shown.

When I came to Lincoln about four years after this time, Dr. Dawson was considerably respected for these operations which he had done in a number of instances. I saw him perform the operation on several occasions, which he did very skillfully, through the vagina and following the method of leaving on the broad ligament clamps until they separated and could be removed spontaneously.

At the same meeting Dr. Mitchell presented a specimen of carcinoma of the breast which he had removed two days previously.

During the years since then many of us have seen Nebraska surgeons come and go. The change for good in surgical environment, equipment and personnel, can scarcely be appreciated by those of you who have come recently upon the scene. It is well to pause occasionally for a word of appreciation of the labors of those who have helped to make the favorable conditions under which we are permitted to work at the present time.

In this work, as in any other, our benefactors have been those who came here, tarried a little while and departed (except that some of them are still with us) doing what they could to make conditions for patients and doctors better than when they came.

RUPTURED ANEURISM OF ABDOMINAL AORTA SIMULATING PERFORATED GASTRIC ULCER

E. A. WATSON, M. D.,
Grand Island, Nebr.,
and
R. S. CRAM, M. D.,
Burwell, Nebr.

The following I believe of enough interest and certainly suggestive enough to be worth considering. I feel that an accurate diagnosis was impossible but a thorough examination of the patient might have revealed a specific infection which might have led one to believe or at least think of something complicating.

Name: Mr. A. R. Age: 54. Occupation: Barber.

Family history: For the past two years patient had some abdominal distress with belching or attempts at belching until it occurred; some loss in weight with increased nervousness; no pain of importance; had not consulted a doctor; no serious illness or accidents in past. Due to the fact that this man was so violently ill and still in shock, also under influence of morphine, further history could not be obtained.

Present history: at 5 a. m., January 23, 1932, patient awoke with feeling of distress in epigastrium. He began massaging over upper abdomen, to move gas as he stated, was seized with sudden and violent pain. Dr. Cram of Burwell was called and found patient in extreme epigastric pain with a pulse of 80, temp. subnormal, patient pale and clammy. It required one grain of morphine hypodermically before any relief of pain was noted. A tentative diagnosis of perforated gastric ulcer was made and immediate operation advised.

I (Watson) saw this patient about 1:30 p. m. same day. The patient was as previously stated and the abdomen was extremely rigid. I fully agreed with diagnosis already given and the abdomen was opened at once. A small quantity of dark blood appeared when peritoneum was opened. A normal stomach and duodenum were brought up. The gallbladder was explored under direct vision and found normal. The lesser omentum was dark and bulging and when opened the lesser peritoneal cavity was full of dark, old and coagulated blood. A second entrance into this cavity was made through transverse mesocolon and the pancreas exposed as I thought of a possible haemorrhagic pancreatitis although the history and symptoms did not coincide. The splenic, gastric and mesentric vessels were carefully inspected for thrombosis or rupture but nothing was found. There was no fresh bleeding present. An aneurism of the aorta was suggested but the vessel was full and regular between the fingers and I did not believe it possible a rupture along this vessel could occur and the patient live 9 hours. A drain was inserted below the colon through the transverse mesocolon and the abdomen closed. The patient expired the following morning about 24 hours after the onset. An autopsy was done by Dr. Cram of Burwell, the findings of which follow.

Autopsy report: Body examined was that of a man about 54 years of age, very sallow complexion and fair nourishment. There were numerous tatooed figures on both arms. No glandular enlargements palpable. Several tubes protruded from a mid-line incision which was extended sufficient to give access to both body cavities. There was some free blood in the abdominal cavity. The mesentery of the colon and stomach was infiltrated with blood, and from the region of the pancreas to the left ilium was a large blood clot, retroperitoneal to the left of the vertebral column. The stomach, duodenum and gallbladder were normal. The spleen and kidneys were normal. The prostate gland showed slight hypertrophy. A mass about the size of a tennis ball is felt in the midline just above the pancreas. On cutting into the mass it was found to be an organized blood clot. This clot is in an aneurism of the abdominal aorta which has a break in the anterior surface of the aneurism allowing the blood to leak out into the surrounding tissue. The blood had also traveled up the aorta to the diaphragm on the right side.

On opening the pleural cavity the lungs, heart and aorta were found to be normal. The right pleural cavity had about 750 cc. of blood in it. The aneurism had dissected up the aorta through the diaphragm and ruptured into the right lung cavity.

Diagnosis: Ruptured sacculated and dissecting aneurism of the abdominal aorta.

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"MEDICAL LIBERTY" PROPAGANDA

The state has been flooded during the past sixty days with propaganda for "medical liberty" presumably by a non-medical cult whose sole aim is to nullify the provisions of the Basic Science law enacted some four years ago.

The literature broadcast would have the reader believe it is propoganda against compulsory vaccination, diphtheria antitoxin, etc., which it is not. It is a veiled attempt to befuddle the public into signing an Initiative Petition calling for an amendment to the Constitution as follows:

"Proposed Amendment to the Nebraska Constitution:

"No law shall be enacted or effective respecting the establishment or perpetuation of any exclusive method or methods of healing in any circumstance, nor infringing upon the free exercise of the right of any person to receive any method of healing, treatment or prophylaxis he or his guardian may choose.

"No law shall be enacted or effective whereby an applicant for a license to practice a certain method of healing shall be examined as to his qualifications for that method by any other person or persons than practitioners of such certain method of healing."

Flimsy and silly as this appears to thinking people, there is a real danger that the necessary 45,000 signers may have been obtained by July 1st to get the proposition on the ballots for the November election. In that case the medical profession must arise to its duty and see to it that it meets with a handsome defeat at the polls.

It was thought when the Basic Science law was passed, and all those engaged in healing the sick placed on an equal basis of knowledge of the sciences fundamental to medicine,—that the matter was settled forever; but too many persons without a scientific foundation of any kind want to practice the healing art. Hence, this propaganda.

SOME OBSERVATIONS ON THE ANNUAL MEETING AT LINCOLN

The annual meeting held at Lincoln, May 24-26, was unusual from several angles. The program was one of unusual excellence and the sessions were well attended. The membership at date of meeting showed about a 10% decrease under last year's; but in spite of this defection the attendance, about 350, was well up to the average, showing sustained interest of those upon whom one may usually count. The spirit of organized medicine lives on in spite of financial adversity.

The guest speakers were:

Dr. A. C. Ivy, Professor of Physiology and Pharmacy, Northwestern University Medical School, Chicago, Illinois.

Dr. W. C. Alvarez, Associate Professor of Medicine, University of Minnesota Medical School, Rochester, Minnesota.

Dr. Henry Schmitz, Professor of Gynecology, Loyola School of Medicine, Chicago, Illinois.

Dr. Thos. J. Kinsella, Surgeon and Assistant Medical Director, Glen Lake Sanatorium, Oak Terrace, Minnesota.

Dr. Karl Menninger, Topeka, Kansas.

Dr. Walter D. Abbott, Des Moines, Iowa.

Dr. Alvarez was unable to be present and sent a substitute, Dr. Andrew B. Rivers of the Mayo clinic.

The work of the house of delegates was carried out with dispatch. The matter of an executive secretary created much interest and while no definite action was taken at this meeting it is apparent that the trend of opinion is drifting toward a reorganization on the basis of an executive secretary in the near future.

The banquet was of unusual excellence. The incoming president's address on the trend of modern medicine was well received. The musical program exceeded anything presented in a generation. One of the features consisted of six numbers of sacred music by the Capella choir of fifty-three voices.

Coincident with annual meeting week, the Nebraska Otolaryngological association featured a banquet and scientific program on the evening preceding the sessions of the Nebraska State Medical Association; the Nebraska Tuberculosis Association held a meeting and gave a banquet on the 24th and the Nebraska Medical Women had a program of their own. The Health Week Program, a feature of several former meetings, was missed this year. It should be revived as a valuable feature, giving the medical profession contact with the laity.

Dr. Adolph Sachs, Omaha internist, was elected president-elect and Drs. Homer Davis, Genoa, and E. B. Hamel, Hastings, vice president. The four councilors whose terms are about to expire were reelected.

The 1933 meeting will be held in Omaha.

CRIPPLED CHILDREN'S FREE CLINICS

Probably nothing so touches the heart strings or awakens the deeper human sympathy to the extent that a clinic for crippled children does. A movement apparently originated by the Elks order and sponsored jointly by the Elks of Nebraska and the vocational education bureau of the State of Nebraska with the cooperation and assistance of the organized profession of the state has featured a series of free clinics for crippled children within the last 25 months and the work has met with universal approval.

The most recent clinic held early in June, in Norfolk, brought to the clinic something like 146 crippled children with all conceivable deformaties.

The area covered by this clinic comprised 15 counties and it is interesting that people came as far as 125 miles to get the benefit of the clinic.

The clinic at Norfolk occupied two floors of the spacious Elks lodge and club rooms which had been transformed into clinic rooms, booths, and consultation rooms, and evidently benefiting by previous clinics, the layout arrangements approached perfection. A wonderful spirit of cooperation was shown not only by the physicians of the area, but by selected groups of local people, men and women, nurses from the hospitals, and others all anxious to assist in the work.

Representatives were present not only from the Elks of the state and the vocational education bureau, but from similar bureaus in South Dakota, Minnesota and Iowa, and also from the vocational education bureau at Washington, all of which tends to show the wide spread interest in the movement.

It is sad to relate that it is stated that not more than about 12% of cripples seen at these clinics can be benefited at all.

In this number is published an article by a well known Nebraska physician giving fuller details of this work.

DR. DEAN LEWIS, PRESIDENT-ELECT, AMERICAN MEDICAL ASSOCIATION

"Dr. Dean Lewis, professor of surgery at Johns Hopkins University School of Medicine and surgeon in chief at Johns Hopkins Hospital, Baltimore, was born in Kewanee, Ill., in 1874 and graduated from Rush Medical College, Chicago, in 1899. He was formerly professor of surgery at Rush Medical College and served in the same position at the University of Illinois College of Medicine. He has been at Johns Hopkins since 1925. Dr. Lewis is a member of the American Surgical Association, the American Association of Anatomists, the American Physiological Association, the American Society of Clinical Surgery and the Southern Surgical Association. He is editor of the *Archives of Surgery* and of the *International Surgical Digest.* He served in the World War with the rank of lieutenant colonel and received the Distinguished Service Medal."

NEBRASKA TUBERCULOSIS ASSOCIATION MEETING

The 24th annual meeting of the Nebraska Tuberculosis association was held May 24th, in Lincoln.

It was an all-day conference featured by morning and afternoon meetings, a luncheon and the annual dinner. The sessions were held at the Lincoln Hotel with the exception of the dinner, which was given in the ball room of the Lincoln University club.

The morning congress was devoted to a Christmas Seal Sale conference. Sixty interested seal sale workers attended and a representative from 23 Nebraska counties noted. These heard talks on seal sale organization; spending seal sale funds; publicity; and ways and means. The ways and means of selling the cheery little Yuletide stamps, which today have become as much a part of every Nebraska citizen's Christmas as the proverbial Christmas stocking, took up the greater part of the morning. Specified, these are: personal solicitation, personal letter delivery, sale by school children, sale through clubs and general mail sale.

Dr. F. W. Heagey, president of the Nebraska Tuberculosis association, welcomed the guests at the opening meeting and Miss Alice Marshall, executive secretary, presided.

At the luncheon following the opening session Dr. John F. Allen, first vice president, was in charge, and O. H. Bimson, assistant superintendent of Lincoln schools, the principal speaker.

"The Cost of Illness in the Schools" was the subject. A few notations from this talk will be of interest to the large number of health workers in our community, and will also show the value of health educational programs.

According to Mr. Bimson it costs more money for children to be out of school, due to illness, than to prevent the illness which makes them absentees. He proves his statement by a few figures: "The annual per pupil cost in the Lincoln schools last year for elementary school children was $110.00. The average attendance during the year was 95% and the 5% absentees at the above cost per pupil meant a total expense of $55,000.00, last year's illness cost."

The record of the preventive measures used in the schools during the same period were itemized and came to $7,940.00. The cost here referred to did not include the expense necessitated by illness to the individual pupil so afflicted.

Schools now keep open ventilated rooms as a part of a general health plan. These rooms were introduced originally for the care of the tuberculous child. A few years ago a child so afflicted was scorned and but few pupils occupied these rooms. Now, many parents request that their children be placed, whenever possible, in the open ventilated rooms. The request is not made as a curative measure but as a health-building process. It is of interest to note how a former contact-fear of the tuberculous child has been replaced by the recognition of the advantages achieved through open ventilated rooms. This knowledge has been propagated in Nebraska, according to this educator, largely through the medium of the health educational programs conducted by the Nebraska Tuberculosis for years.

The afternoon session was presided over by Mrs. Edward Fisher, chairman of the Lincoln and Lancaster County Tuberculosis association. Talks were made in this division by Dr. F. W. Heagey, Dr. John F. Allen, Dr. E. R. Hays, of Falls City; Mrs. H. C. Sumney, chairman of the Omaha Health camp, and Mrs. Arthur Stevenson, chairman of the Lincoln Health camp.

Leading the field in Nebraska of the Fresh-air Camp movement for child-betterment is the Nebraska Tuberculosis association with the operation of the above camps.

The Omaha camp was built by the Lions club in 1930 at an expenditure of $10,000 and when completed turned over to the Nebraska Tuberculosis association to run. It has been named a camp but close inspection reveals a delightful summer home for sick children. The ten acres of ground surrounding the house commands lovely views of Omaha's exquisite slopes and hollows. 45 children between the ages of 9 and 12 are cared for here during July and August. These children are required to have thorough physical examinations, have all remedial defects corrected, and be immunized against typhoid fever, smallpox and diphtheria. Supplementary feeding and rest periods are given mid-morning and mid-afternoon. Mothers classes are held in the effort to educate the mothers in carrying the program into the homes. The object of the camp is education—to the children, to the parents, to the community.

Thirty-five children were cared for at the Lincoln and Lancaster county nutrition camp. Before entering this camp these children were examined by the City Health Department and skin tests for tuberculosis, toxin and anti-toxin, and immunization for smallpox, administered. The greatest gain made at this camp was by one of the girls attending, who put on eleven and one-half pounds during the eight weeks of camp curriculum. Ages of the children attending this camp ranged from 9 to 18 years. Nature study, handicraft and music were taught the children at both camps.

Important information in the program of the modern treatment of Pulmonary Tuberculosis marked the closing session of this congress. This was given in an address at the banquet by Dr. Thomas J. Kinsella, assistant medical director of Glen Lake Sanatorium, Oak Terrace, Minnesota, and an expert in the field of tuberculosis research.

The salient theme of his address seemed to be the beautiful message of hope he gave to those afflicted with tuberculosis, a message of hope to the future generations through present day developments of chest surgery. His talk was illustrated with numerous slides depicting the remarkable rehabilitation of cases which have undergone various phases of this chest surgery. Others on the evening program were: Dr. John F. Allen, who spoke on the program of the National Tuberculosis association; Dr. H. W. Benson, the tuberculosis clinics held in Oakland for the second year. The high school children in these clinics were given the Mantoux test, the re-actors x-rayed, and all, given a thorough physical examination. Honorable F. C. Zehrung, mayor of Lincoln, gave the banquet greetings and Dr. F. W. Heagey, president, the introductory talk.

Following the dinner the annual directors meeting was held when the following were reelected: Dr. F. W. Heagey, president; Dr. John F. Allen, first vice president; Fred W. Conrey, second vice president; C. J. Claassen, treasurer. Clark Haas was elected the new secretary taking the place of Clinton Brome, who becomes a member of the Directorate. New members elected to the executive committee include: Mrs. J. E. Davidson and Shirley S. Ford. Dr. J. A. Weinberg, of Omaha, and Edward C. Crites, of Chadron, are the newly elected directors. Mrs. F. W. Heagey. was made the new member of the Children's Health Camp Committee.

Directors re-elected for a period of three years include: Dr. F. J. McRae, Albion; Dr. P. A. Sundbury, Holdrege; Mrs. H. W. Benson, Oakland; C. R. Gates, Grand Island; H. D. Landis, Seward; John C. Miller, Nebraska City, Emil Wolbach, Grand Island; Mrs. W. W. Whitfield, Lincoln; Miss Chloe Baldridge, Lincoln; Mrs. Paul Brandley, Omaha; Dr. Robert D. Schrock, Omaha.

—F. W. Heagey, Omaha.

COMMUNITY SERVICE

It is the right and duty of every good citizen to devote a certain per cent of his time to some community service. This is a positive obligation that every normal man owes to his fellowmen.

True, some men live in a community year after year and take a "free ride," so to speak, enjoying the privileges, opportunities and environment supplied by their less-selfish fellow citizens who have devoted their time, effort and money to make the home community a better place in which to live.

Were it not for the unselfish service of public spirited citizens in every community this would be a cold, drab world indeed. There would be no community clubs, no civic or social organizations. no 4-H clubs, or similar groups to develop the thought and action of the youth of the land along constructive lines. There would be no chambers of commerce, fair associations, organized bands, and musical groups, debating societies, and other community movements to break the monotony of the daily grind and furnish relaxation and opportunity for wholesome public service.

The citizens whose vision reaches no further than the circle of his own personal buisness, who cannot see beyond his limited commercial horizon, who cannot visualize the broader scope of living, is missing a large share of the worth while things of life.

People differ in temperament, ideals and aspirations, but everyone should take some time from his daily work to devote to some form of community service—to some hobby, if you please —something that will leave the world a little better than he found it.

It is unadulterated selfishness for people to live in a world where the thorns have been removed from the pathway of life by their fellowmen, where the bumps have been softened, and the picture has been brightened, without having had any part in such wholesome worthwhile service.

—A. Q. Miller, Sr.

NEBRASKA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The Nebraska Academy of Ophthalmology and Otolaryngology held its nineteenth annual meeting at the Lincoln hotel in Lincoln, Monday evening, May 23, under the presidency of Dr. D. D. Sanderson of Lincoln.

About 35 members were in attendance.

Following a dinner clinical case reports were presented by Dr. F. F. Teal and Dr. D. D. Sanderson. Dr. E. B. Brooks read a paper, "Infections of the Tear Sac and Their Treatment," illustrated by lantern slides.

Dr. J. J. Hompes. who had just returned from a trip of six months duration spent in India and the far East, gave an informal talk on his experiences.

The officers elected to serve the coming year were: Dr. J. B. McPherson, Hastings, president; Dr. W. H. Heine, Fremont, vice president, and Dr. Clarence Rubendall, Omaha, secretary-treasurer.

QUALITY OF MEDICAL SERVICES DETERIORATE UNDER COMPULSORY HEALTH INSURANCE

In preceding articles Social Insurance as a whole has been considered. In this and subsequent articles our observations will deal more particularly with Compulsory Health Insurance, one phase of Social Insurance. The chief danger to medical progress and efficient medical service to the American public comes from that small group who wish to establish lay bureaucratic control over the private practitioners of medicine and dentistry.

The state exercises a legitimate and proper function in public hygiene and sanitation, the teaching of personal hygiene in schools and colleges, in the medical care of paupers, criminals, and the indigent in general, but whenever and wherever it has entered into the private practice of medicine it has always resulted in inefficiency. Even in institutional work, with the possible exception of University Clinics, the medical service rendered by the government is rarely excellent or even good, nearly always mediocre and often times even worse.

The health, happiness, prosperity, and efficiency of the citizenship of any nation depends more upon the integrity, ability, unselfishness, and enthusiasm of the medical and dental professions and upon the quality of medical and dental services rendered to the people than upon any one other factor. Any change in the practice of medicine and dentistry which will in any way hinder these professions from giving their best services will eventually react unfavorably upon the whole nation. That state medicine and Compulsory Health Insurance actually will and does lower the general quality of medical and dental services is supported by reason and experience. While it may level up a little from the bottom it unquestionably levels down from the top and it is this leveling down that will surely stop medical progress.

Medical progress depends not so much upon the rank and file of the profession as upon occasional great men with vision. If we unduly hamper these great medical minds, medical progress must cease. The quality of medical services received by the people in general depends in large measure upon the quality of teaching which the rank and file of the profession receive and upon the enthusiasm and the ideals which are instilled into them by their teachers. Men of great ability can do their best work only if absolutely free, and a physician under lay bureacratic control never is entirely free. Andrew Carnegie, one of the most successful men of modern times in the best sense of that word, makes the following statement in his Autobiography: "Thereafter I never worked for a salary. A man must necessarily occupy a narrow field who is at the beck and call of others."

One of the continually recurring misstatements in the Compulsory Health Insurance propaganda is that it encourages personal hygiene and consequently disease prevention. Nothing could be farther from the actual facts. Which person is more likely to take care of his teeth —the one who gets his dental services free, or the one who has to pay for it out of his own pocket? Those who claim the former just do not know human nature.

One of the chief causes of wonder of the Germans during the World War was the splendid condition of the teeth of the American soldiers as against the almost universally poor teeth of the Germans. Why this great difference? The chief and principal reason is that American citizens have their teeth taken care of by private dentists who take a very personal interest in each individual patient. Most American dentists and physicians are spending much of their time instructing their patients in general and oral hygiene. Contrast this with the work of the Krankenkasse physician of Germany who asks his patient one or two questions, then reaches into a file, hands him a typewritten prescription and gets rid of him just as quickly as he can and as he must, if he is to see fifty patients in an afternoon office period of two hours; and this he is by force of necessity compelled to do if he is to make a living for himself and his family at twelve cents an office consultation. Then again the claim is made that Compulsory Health Insurance examinations are more thorough. This too is a statement contrary to fact and to reason when one realizes that the sort of office consultation above described gives the physician the same pay as a thorough physical examination does. No man can afford to make a careful, painstaking examination for twelve cents—not even in Germany, where living expenses are almost as high as in this country. One "Krankankasse" physician in Berlin told me personally that he made twenty-three house calls in four and one-half hours or at an average rate of one in a little less than twelve minutes, driving from house to house, going up from one to four flights of stairs each time, examining a patient and prescribing for him.

Brend states that in England the average time spent by panel physicians in making a diagnosis is from three to four minutes. Another English writer in commenting on the above facts rightly observes that these are not abuses of Compulsory Health Insurance but inherent faults of the system.

We have all repeatedly seen and heard the statement that seventy per cent of the American people—namely, the low and moderate income classes—are not getting adequate and efficient medical services. Where those who make this statement get their statistics no one has ever been able to find out. The fact is that there are no statistics available on his point. From this it must be evident that the only place they can get these figures is from the depths of their fertile imaginations.

If we stop to investigate the source of these statements, we invariably find that they emanate from two classes of individauls—namely, a certain type of ultra medical specialist whose only experience is or has been with the extremely rich whom he charges fancy, exorbitant fees and with paupers whom he treats in charity hospitals. As a consequence he has no personal experience with patients with moderate incomes and has no right to express an opinion on this subject. The other class who repeat these figures are usually persons who never have had personal experience with the practice of medicine and hence their opinions are practically worthless.

I maintain that the poorer classes of patients get better services in this country than they do in those countries of the world that have Compulsory Health Insurance and that their medical requirements are at least as efficiently met as are their food, clothing and particularly housing requirements. This phase of the problem is an economic one and can not be solved by a palliative such as Social Insurance is.

—Edward H. Ochsner, Chicago.

"Doctor, I dream constantly of golf."

"Fine."

"Well, there's no harm in a man playing a little good golf in his sleep."

DR. CARROLL D. EVANS, COLUMBUS SURGEON, HONORED: FIFTY YEARS IN MEDICINE

The Platte County Medical society sponsored a complimentary dinner, at the Evans hotel, Columbus, May 26, 1932, honoring Dr. C. D. Evans, Sr., on his fifty years in medicine. About forty were present, including the members of the society and their wives: Dr. Emil H. Burgherr, Lincoln, Major, Medical Corp, U. S. Army; Dr. John P. Lord, Omaha, who was guest speaker; several physicians and their wives from nearby counties and the editor of this *Journal* and wife.

DR. CARROLL D. EVANS, Sr.

Carroll D. Evans, Sr., Columbus, Nebr., was born at Tarentum, near Pittsburgh, Pa., May 26, 1856, of early Colonial ancestry, one of his early forbears having come to Pennsylvania with William Penn, and on Penn's return to England was appointed by him as acting governor. Dr. Evans was distantly related to "George Elliot" the writer, whose real name was Mary Ann Evans. His parents were members of the Society of Friends.

His early education was obtained in the public schools of his native place and later he attended business college in Pittsburgh. His medical education was obtained in Philadelphia and Baltimore and he was graduated from the College of Physicians and Surgeons, Baltimore, in 1882. Following graduation he practiced for one year at Bradford, Pa., and then came to Columbus, Nebr., where he has been an outstanding surgeon for many years. Dr. Evans in later years did postgraduate work in Chicago and New York.

Before he entered upon the study of medicine he was a lieutenant in the Pennsylvania National

Guard and saw field service in the Pittsburgh Riots of 1877. He has been colonel and surgeon general of the Nebraska National Guard; twice delegate to the Association of Military Surgeons.

Dr. Evans has always taken a keen interest in the civic affairs of Columbus and has been part of most of the civic activities.

Dr. Evans is one of the most prominent Masons in Nebraska, having held various positions of honor and trust in the order.

Dr. Evans and Miss Lorene North of Columbus were married in 1886 and are the parents of two sons and two daughters. The sons, Dr. J. North and Dr. Carroll D. Jr., are associated with their father in the practice of medicine and surgery.

DERMATOLOGIC HINT NO. V

Dry, tightly adherent scaling on the scalp is frequently psoriasis and not "danruff". Look for typical lesions elsewhere, especially about elbows and knees.

—Donald J. Wilson, Omaha.

OBSTETRICAL AND GYNECOLOGICAL HINTS NO. V.

Violent attempts to resuscitate the baby (i.e.) swinging, slapping and pounding do great harm. After emptying the trachea of mucus, treat the child as you would an adult in shock. In difficult labors and deliveries, the baby is in shock and probably has some degree of intracranial damage.

—Harold S. Morgan, Lincoln.

EDITORIAL PARAGRAPHS

Delay in receiving copy compels delay in publication of the Minutes of the annual meeting until August 1st.

The annual meeting of the Clinical Congress of the American College of Surgeons will be held at St. Louis, October 17-21.

We notice that, sensing the signs of the times, at least one nurses association has voluntarily voted a one dollar reduction in fees in all cases.

Because community welfare work has a strong appeal to the editor an article by a lay friend on Community Service prepared for publication elsewhere, is republished in this number.

According to the director of public health, no cases of infantile paralysis occurred in Nebraska during April and May of this year and but three cases were reported for the current year so far.

Dr. W. W. Keen, Philadelphia, the grand old man of American surgery, died at the age of ninety-five years. He was a surgeon in the Civil and Spanish-American wars, a prolific writer and was one of the foremost surgeons of his generation.

It is interesting to note that diphtheria immunization is being accepted in relatively small communities in this state. An immunization clinic has recently been held at Curtis, a place of less than a thousand people. A rural school community cooperated 100%.

Tumors, benign and malignant, will be the theme of the 1932 Graduate Fortnight of The New York Academy of Medicine. The medical profession of the country is invited to participate in the intensive two week study of this important medical and surgical subject. The Fortnight will be held from October 17th to the 28th, inclusive.

The Journal-Lancet is authority for the statement that the Montana legislature passed a bill giving physicians who care for or treat persons injured in accidents, liens on any judgments, settlements or insurance, obtained by persons by reason of such injuries. This seems right.

Gifts totaling over ninety thousand dollars have been given to the University during the last year. Dr. and Mrs. J. A. Henske (she a daughter of the late Dr. H. M. McClanahan), have given real estate valued at $30,000 toward the McClanahan Memorial Children's clinic.

It is interesting to note that a considerable percentage of doctor's sons take to medicine as a career. It is reported that out of a graduating class of eighty at the University of Nebraska College of Medicine, fifteen are sons of physicians and two phyisicians had two sons each in the class.

The State Fair Board has appropriated $600 toward the Health Week program, which is very encouraging to those who have this work in charge. Health Week at the State Fair is the creation of the public activities committee of the Nebraska State Medical Association and has won a place in the hearts of the lay public.

The inimitable Dr. John Lovett Morse of Boston not long ago made the very characteristic and true statement to the effect that a doctor who subjected a patient to unnecessary special examinations to rule out conditions, which were obviously not present showed as poor judgment as if he failed to recognize a positive diagnosis.—*Southern M. & S.*

The uncertainty of human life is well illustrated in a story that has come to us of a physician in middle life and in apparently perfect health who had ministered to a fellow practitioner in the seventh decade in his last illness from cardio-renal disease and who himself died a rather sudden death from a heart affection less than a month after his fellow's death.

The Americal Board for Ophthalmic Examinations will hold an examination in Montreal on Monday, September 19th, 1932, at the time of the meeting of the American Academy of Ophthalmology and Oto-laryngology. Necessary applications for this examination can be procured from the Secretary, Dr. William H. Wilder, 122 South Michigan Avenue, and should be sent to him at least sixty days before the date of the examination.

Someone has classified the financial abilities of patients to pay as follows: "Fees are based primarily on ability to pay. There are four general classifications: Those who can pay any fee; those who can pay the average fee; those who can pay something but not even the average; those who can pay nothing. Eighty-five per cent of those cared for by phyisicans in Lincoln fall within classes two and three. These two classes cannot afford to pay prices which the doctors must charge to assure a modest income."

Announcement is made of the Eleventh Annual Scientific Session of the American Congress of Physical Therapy, which, this year, will be held in New York City. The Hotel New Yorker, with its excellent convention facilities, will be the official headquarters. The convention will be conducted over the week from September 5th to the 10th, but, officially, the scientific sessions will be run on September 6, 7, 8, and 9. On September 10, Clinics will be given at more than fifteen New York Hospitals.

A typewritten article of 15 pages sponsored by a large advertising agency and lauding tomato juice for its vitamine content and general healthfulness lies before us. The vitamine content is freely acknowledged, but that does not make it taste any better. We are getting too vitamine conscious. A generous mixed diet is what people need and such diet provides the vitamines. Special cases require special diets and here the vitamines figure strongly. The point is that the lay public is likely to get the impression that vitamines are everything.

The most important glands possessing an internal secretion may here be mentioned. They are the thyroid, parathyroids, the suprarenals, the pituitary, the thymus, the pineal, certain portions of the pancreas and the reproductive glands. In addition there are other structures which may possess an internal secretion but about which comparatively little is known. These are the spleen, the prostate, and the two tiny pea-like carotid glands, one on either side of the neck. The kidney, liver, duodenum, mammary glands and other organs of the body are said also to have internal secretions, but this has not been scientifically verified.

What some people think about physician's fees and hospital costs may be seen in the following from an Omaha daily: During wartimes our doctors charged $2.50 per visit. They still ask that. The plainest, barest room in a hospital is $4 per day. A room with Wilton carpet, the nicest of bedding, table, tile bathroom can be had at a hotel located on State street, Chicago, for the same money. The hospitals pay nothing to their nurses, and the food they serve is the plainest. Fifty cents per day would more than pay for the meals served. I asked a doctor why a bare room should bring $4 per day. He said, "Because hospitals did so much charity work." So Richard Roe sick is obliged to pay the hospital expense of Richard Roe. Let doctors and hospitals come down, as well as teachers and farm produce.

NECROLOGY

Jerry E. Brainard, Superior, Nebr.; native of Geneva, Ohio; Cleveland Medical College, 1889; practitioner at Superior since 1892, forty years; an unostentatious man, but withal a colorful character thoroughly devoted to his patients; member, Nebraska State Medical Association; died after a seven months struggle with cardio-renal disease, May 15, 1932, aged sixty-seven years.

The following is taken from a lay editorial tribute to the deceased:

"His love for children was a beautiful thing in the life of Dr. Brainard. Child-less, he bestowed all his pent-up love for children on scores of little friends. At Christmas time, many a boy and girl received sleds and dolls from an unknown Santa—a very un-Santa-like person in appearance with his slight, wiry figure, his keen, gray eyes, and his lean face which bore the marks of hot winds and the stings of countless blizzards.

"The old family doctor is passing. The Fosters, the Mitchells, the Brainards. Time was, he settled in a community when he left college and lived there until he died. He had no office hours. He was a poor bookkeeper and a poorer collector. He always carried a kerosene lantern and in winter, a snow shovel. Often he was compelled to ride on horseback over the snow-bound roads as Dr. Frank Mitchell did the five miles to our farm every day for three weeks during the last illness of my father, the late Thomas H. Owen. The automobile, the telephone, the hospital, the specialist, have robbed us of a fine figure, the old family doctor. His passing is the penalty of progress.

"But "Doc" Brainard and his contempories are not dead. They live on in the memories of those whom they served so well and faithfully and with so little thought of remuneration back in the Fodder Years. And somewhere in the land of green pastures and still waters, where happy, healthy children romp among the grass and flowers, where birds sing, where only bright sunshine reigns and no storms can enter, surely there is a quiet nook for those good Samaritans of the medical profession."

Joseph E. Spatz, Medford, Oregon; retired; native of Northumberland county, Pa.; Hahnemann Medical College, Chicago, 1885; practitioner at Fairfield, Nebraska, for upward of thirty years from date of graduation; member Nebraska state board of health for nine years; member Fairfield (Nebr.) board of education nine years; active in all civic affairs of the community; former member, Nebraska State Medical Association; resident of Medford, Oregon, for past fifteen years, where he was the owner of large orchard properties; died May 7, 1932, of an organic heart lesion, aged seventy-two years. A widow and two sons survive.

John Q. Elmore, Gordon, Nebr.; retired; University of Tennessee College of Medicine, Memphis, 1891; physician at Gordon for forty years; died June 8, 1932, aged eighty-one years. A widow and son survive.

William F. Mitchell, Superior, Nebr.; native of Knoxville, Iowa; son of a pioneer Superior physician, the late Dr. John W. Mitchell; University of Illinois College of Medicine, 1902; practitioner at Oak, Nebraska, and Waterloo, Wis., each, three years, after which he came to Superior in association with his father; member, Nebraska State Medical Association; a leader in community civic affairs, cheerfully and substantially supporting all worthwhile institutions and endeavors; died June 3, 1932, of a heart attack, aged fifty-four years. A widow and two daughters survive. A medical friend furnishes the following:

"Dr. Mitchell was one of the outstanding medical men of the state. On the advice of his father he obtained a B.Sc degree before studying medicine and then took an internship in a Chicago hospital before beginning practice. This training was unusual at that time and he added to this excellent foundation by much postgraduate work. In addition to being an excellent general practitioner he was a skilled anesthetist and an exceptionally good pediatrician. He was a splendidly trained laboratory man too and did blood chemistry, functional gastric analyses, kidney function tests and balsam metabolic tests with skill. His patients not only received the benefit of his clinical experience but also all the later advances in diagnostic methods."

AN INFANTILE BANQUET

"You're looking fine," announced the doctor to his patient. "Have you followed my dieting instructions and eaten only what a three-year-old child would?"

"Yes, doctor," was the sad reply. "For dinner I had a handful of mud, one of coal dust, a button hook and a box of safety matches."

INSTALLATION OF PRESIDENT OF THE NEBRASKA STATE MEDICAL ASSOCIATION

The formal installation of President Cook took place at the opening of the session on Tuesday afternoon, with Dr. K. S. J. Hohlen presiding.

DR. HOHLEN: It is my solemn duty to introduce our outgoing president. He has been pretty active all year. He has worked hard and lived up to the prediction I made last year. I have great pleasure in introducing to you our president, Dr. Lucien Stark, who will introduce the president-elect.

DR. STARK: It has been more or less of a pleasure to be at the head of this organization. I have counted it a privilege to be up here with Dr. Hohlen and some of the rest. The probabilities are you are glad to see me for the last time as your presiding officer.

During the last few years, a good many efforts have been made to industrialize our country. In 1929, we found out we were not quite as industrial as we thought we were. We have commenced to go back to a system of individualism, which has always been the basis of our practice in medicine, particularly. The man who succeeds me styles himself as a country doctor—A. E. Cook, your president. (Applause, audience rising).

PRESIDENT-ELECT A. E. COOK, (Randolph): Mr. Installing Officer, Retiring President Stark, and Members of the Nebraska State Medical Association: I note in your program that my remarks are given the august title of an "Address." "A Few Remarks" would be a more fitting title, it seems to me; as I shall, intentionally, try to make my remarks brief at this time for two reasons: First, my presidential address will be given at the Banquet tomorrow evening. Second, I think the time of the association should not be used by the president unless he has something to say that is of special interest or importance, or both; and as I feel that I have neither anything of general interest nor of special importance to say at this time, it seems to me that your time can be spent to much greater advantage in a consideration of the scientific program prepared for you.

In assuming the duties of office as your sixty-fourth president, I wish to say that I feel it is a great honor to be president of this particular organization which was born in my native state just two years before my advent into this great state.

It has been my privilege and pleasure to be affiliated with this splendid organization for just half of its present existence, and it shall be my constant endeavor to uphold and promote those lofty and exalted principles for which it has stood, for which it was organized, and for which it still stands.

I wish to say that I assume the duties as your president in a servile attitude, and that I am carrying no chips on my shoulder; nor have I any axes to grind. My whole attitude and effort will, I hope, be directed to serving your organization to its best interests insofar as I am capable of doing so.

After all, the most important officer of any medical organization is its secretary. The success of such an organization depends very largely on its secretary, as most of its other officers are elected annually, while the secretary usually holds office from year to year for many years, and he, more than any one man, makes a medical society whatever it happens to be.

With this knowledge in mind, and aware, also, of the fact that your president can accomplish only those things which the other officers of the society wish him to accomplish, I assume the duties of president in an attitude of humility, fully aware that no administrative program which I, or any other man, can inauguarate will be 100 per cent satisfactory. Criticism, both friendly and otherwise, is said to be a good thing; hence I shall try to receive all criticism in a proper attitude, and try to profit by it as much as is possible.

Since arriving at the age of maturity, I have always maintained, and I still maintain, that none of us has any rights except insofar as those rights do not interfere with the rights of others. I shall try to keep this truth uppermost in my mind during my term in office.

Some curtailment of expenses may become necessary during the current year, but we shall try very hard to see to it there is no curtailment of efficiency.

Important and far-reaching changes are to be offered to the house of delegates at this present session, and I hope that such changes will be given the fullest consideration before any final action is taken.

I thank you for your kind attention during these brief remarks.

AUXILIARY NOTES

On May 24th, 25th and 26th, the Woman's Auxiliary to the Nebraska State Medical association met at Lincoln with headquarters at Hotel Lincoln.

Tuesday, May 24th, the pre-convention board meeting was held at 9:30 a. m.

At 12:30 there was a Dutch treat luncheon at the University club. Following this the annual business meeting took place.

In the evening a theatre party was given by the Lancaster County Auxiliary in honor of the visiting ladies.

On Wednesday morning they were taken through the State Capitol. This was followed by a breakfast at the Shrine Country club where Dr. Carl Menninger gave a talk on "Factors in a Happy Marriage as Seen by a Psychiatrist." This was largely attended by auxiliary members, and thirty women representing Women's organizations.

The annual banquet was held at 6:30 at the Lincoln Hotel and a delightful program of varied interest followed. Of special interest to doctors and their wives were the vocal numbers rendered by Howard Stark, son of Dr. Lucien Stark, the outgoing president.

Thursday morning the post-convention board meeting had a session with Mrs. Clyde Roeder presiding.

The following officers were elected: Mrs. Clyde A. Roeder, Omaha, president; Mrs. B. F. Williams, Lincoln, president-elect; Mrs. H. R. Miner, Falls City, vice president; Mrs. Lynn T. Hall, Omaha, secretary; Mrs. E. E. Farnsworth, Grand Island, treasurer; Mrs. Adolph Sachs, Omaha, Mrs. Kildebeck, Emerson, Mrs. W. C. Miller, Arapahoe, and Mrs. Roy S. Cram, Burwell, directors.

Committee chairmen:
Public Relations—Mrs. Harry Flansburg, Lincoln.
Legislation—Mrs. C. W. Pollard, Omaha.
Budget—Mrs. Lucien Stark, Norfolk.
Hygiea—Mrs. Paul Siman, Wayne.
Historian—Mrs. Floyd Rogers, Lincoln.
Parlimentarian—Mrs. Floyd Clarke, Omaha.
Publicity—Mrs. W. H. Stokes, Omaha.
Revisions—Mrs. John R. Nillson, Omaha.
Honorary Director—Mrs. F. A. Long, Madison.
Past President—Mrs. Morris Nielsen, Blair.

One hundred and fifty attended the annual convention.

—Mrs. W. H. Stokes, Omaha.

TUBERCULOSIS ABSTRACTS

Health examinations of students in high schools, colleges and universities are being applied more widely every year. Latent defects are thus brought to light and early treatment results in correction or cure of the incipient disease. Agencies for the control of tuberculosis have been among the leaders who stressed the importance of health examinations, and the value of the application of the tuberculin test and x-ray examination in the discovery of latent tuberculosis has been repeatedly demonstrated. The results of a recent investigation at the Henry Phipps Institute in Philadelphia into the incidence of tuberculous infection and tuberculous disease in medical and college students are presented below. Although the high incidence of tuberculosis in medical students may present a special problem the value of health examinations, here illustrated, has universal application.

TUBERCULOSIS IN MEDICAL AND COLLEGE STUDENTS

Since medical students either during their medical course or in subsequent years often become ill with tuberculosis, a study was undertaken to determine the frequency and severity of tuberculous infection among medical and premedical students of the University of Pennsylvania. The usual methods of investigation into the incidence of tuberculous infection and disease were employed.

After the weight and height had been recorded, inquiry made concerning respiratory disease with which they had suffered and possible exposure to tuberculosis noted, students were given intracutaneous tuberculin tests, stereoscopic roentgenological examination of the chest and, when the latter revealed tuberculous infiltration of the lung, physical examination.

TABLE I

Results of the Tuberculin Test in College and Medical Students

Students	Number Tested	Reacted to Tuberculin Per Cent
College—		
First year	64	84.4
Second year	68	80.9
Third year	67	92.5
Fourth year	37	83.8
Total	236	85.6
Medical—		
First year	99	84.8
Second year	103	94.2
Third year	126	96.0
Fourth year	111	98.2
Total	439	93.6

Results of the tuberculin tests of 236 premedical and 439 medical students are shown in Table I. There was no continuous increase in successive classes of the number of premedical students who reacted to tuberculin, variations being doubtless dependent upon the small number in each class. The percentage of premedical students that reacted to tuberculin was 85.6 per cent. The number of medical students of the first year who reacted was approximately the same, namely, 84.8 per cent. In the second and third year classes the number who reacted was higher, and in the fourth year it reached 98.2 per cent. The continuous increase in the frequency of infection during the medical course corresponds with the increasing number of tuberculous infiltrations found by roentgenological examination.

TUBERCULOUS LESIONS FOUND

Table II shows the result of roentgenological examination of 731 medical and premedical students arranged in classes. Calcified nodules in lungs or lymph nodes represent tuberculous infection, usually acquired in childhood. Their opacity and sharp definition distinguishes them from the diffuse lesions that are listed in the table as latent apical tuberculosis and manifest tuberculosis. They are doubtless in process of healing but their presence does not exclude the occurrance of progressive tuberculosis.

TABLE II

Results of Roentgenological Examinations of College and Medical Students

Students	Number Given Roentgenological Examination	Number With Latent Apical Tuberculosis	Number With Manifest Pulmonary Tuberculosis
College—			
First year	78	1	1
Second year	79	3	0
Third year	81	3	0
Four year	41	2	0
Medical—			
First year	98	3	1
Second year	103	12	0
Third year	129	14	4
Fourth year	122	16	9

Calcified nodules of the lungs or the adjacent lymph nodes without other demonstrable tuberculous lesion were found in 44 of 279 college students or 15.8 per cent and in 79 of 452 medical students or 17.5 per cent. In ten of 45 instances of latent apical tuberculosis in medical students and in three of fourteen instances of manifest pulmonary tuberculosis in the same group, there was associated tuberculosis of the tracheobronchial lymph nodes.

With the lesions designated as latent apical tuberculosis there have been no symptoms of tuberculosis, and physical examination has revealed no physical signs. The number of these lesions has been practically the same in students of the four premedical classes and of the first year class in medicine. They increase in number considerably in the second year and slightly in the two subsequent years.

Students with manifest pulmonary tuberculosis have had symptoms such as cough, hemoptysis, fever or loss of weight. Significant physical signs were rales, impaired resonance and restricted movement over the site of the lesion. Only one premedical student with manifest pulmonary tuberculosis was found.

One instance of clinically manifest tuberculosis was found in the first year medical class and none in the second year. In the third year class, however, there were four instances of pulmonary tuberculosis accompanied by symptoms or physical signs and in the fourth year class there were nine.

APICAL LESIONS

In Table III lesions found at the apex of the lung are classified in accordance with their extent. Shadows of doubtful significance, designated as suspected apical infiltration, were found in a considerable number of medical students, though it is uncertain whether these are due to tuberculous infiltration. It has been considered desirable to reexamine students with these anomalous shadows at repeated intervals.

In about 3 per cent of college students there was infiltration limited to the area above the clavicle, where as 8.6 per cent of medical students had similar lesions, their number increasing from 3 per cent in the first year to 10 per cent in the fourth year. In some instances opaque salients project below the border of the second rib, and in all others there were soft scattered shadows throughout the area above the clavicle.

Conspicuous pulmonary infiltration extending below the clavicle was not found in students of the first two years, but occurred in 6 medical students of the third year and in 13 of the fourth year.

The number of young adults with apical lesions of tuberculosis increases gradually with increasing age, but the incidence of these lesions in medical students, increasing rapidly in successive years of the medical course, with astonishingly high incidence in students of the fourth year, indicates that they are peculiarly subject to grave tuberculous infection.

TABLE III

Analysis of Apical Lesions

	Number Given X-ray Examination	Supra-clavicular Apical Infiltration	Apical Infiltration Extending Below the Clavicle
College—			
First year	78	1	1
Second year	79	3	0
Third year	81	3	0
Fourth year	41	2	0
Medical—			
First year	98	3	1
Second year	103	12	0
Third year	129	12	6
Fourth year	122	12	13

FURTHER STUDY INDICATED

The results of this investigation, confirming as they do, previous observations made at various medical schools concerning the development of clinical tuberculosis in medical students and internes present a problem that requires further study. While the treatment of the individual patient differs but slightly from any other individual with a similar tuberculous lesion the cause of the high incidence of tuberculous disease in this group must be sought for and prevented.

"Tuberculosis in Medical and College Students"—H. W. Hetherington—F. Maurice McPhedran—H. R. M. Landis—Eugene L. Opie—Archives of Internal Medicine, Nov., 1931.

THE SOCIETIES

The first scientific meeting of the **Southwest Nebraska Medical Society** was held at McCook. A banquet was served to the 40 physicians and their ladies following which the program as below given was rendered:

"The Diagnosis of Prostatic Disease," C. A. Owens, M. D., Omaha; Discussion by W. C. Miller, M. D., Arapahoe, and D. H. Morgan, M. D., McCook.

"The Relationship Paranasal Sinuitis to Systemic Disease," A. D. Dunn, M. D., Omaha; Discussion by F. W. Shank, M. D., Oxford, and J. S. Hill, M. D., McCook.

"Tumors of the Breast," Herbert Davis, M. D., Omaha; Discussion by W. E. Stewart, M. D., Stratton, and W. D. Mackechnie, M. D., Indianola.

The **Scotts Bluff County Medical Society** at a meeting June 16, at Scottsbluff, listened to a program put on by Dr. O. S. Fowler, Denver urologist. An outline of the program is here given:

1. Visceroptosis and its effects.
2. Ptosis of particular organs.
3. Differentiation of abdominal symptoms. Chronic and acute.
4. The role of the Adrenal glands in visceroptosis.
5. History of Nephropexy.
6. An effective method of Nephropexy, which includes an Adreno-pexy.
7. Movies of this operation in plain and color films.

The June meeting of the **Otoe County Professional Society** was held at St. Mary's Hospital, Nebraska City, Monday evening, June 13.

Dr. Roy Ralston of Omaha demonstrated the use of inter-dental wiring and the modified Barton plaster bandage in the treatment of fractures of the jaw.

Dr. C. A. Hull and Dr. Herman Johnson of Omaha demonstrated the application of splints and plaster in the treatment of fractures of the spinie and extremeties.

These demonstrations were supplemented by explanatory remarks and answers to questions.

—H. B. Morton, Sec'y.

The **Cass County Medical Society** held a picnic meeting at Weeping Water park June 14. The families of physicians attended as did also the dentists and their families as invited guests. Dr. Donald J. Wilson and Dr. William Schearer, Omaha, gave the scientific program.

Forty physicians and surgeons of this section assembled in Chadron Wednesday to attend the **Twelfth Councilor District Medical Society** annual spring meeting of Nebraska, sponsored by the Northwest Nebraska County Medical Society at the Chadron Country Club.

Out-of-the-city speakers included Dr. Donald H. O'Rourke of Denver, Dr. Charles W. Dorsey of Denver, Dr. Lucien Stark of Norfolk, and Dr. Tracy R. Love of Denver.

At the banquet in the evening Dr. E. F. Dixon of Pine Ridge, S. D., in charge of Indian medical work on the reservation and Dr. Stark addressed the visiting medical men.

A meeting of the **Tri-County Medical Association** was held at the office of Drs. Mockett and Everett on Monday evening with doctors from Sidney, Scottsbluff, Gering, Chappell and Dalton in attendance.

Dr. Gentry of Scottsbluff was the principal speaker of the evening, while case reports were given by all doctors present. The subject for discussion was, "Mumps."

The **Saunders County Medical Society** met at the American Legion Hall, Wahoo, May 30. The program consisted of a paper by Dr. Bruce Eldridge, Omaha, the subject of which was Preventative Pediatrics. Following which Dr. J. T. Maxwell, Omaha, gave a talk on big game hunting in Africa. This was illustrated by motion pictures taken by Dr. Maxwell. The program was very interesting and instructive and very much appreciated. It was ladies night. The doctors' wives and the nurses from the Community Hospital were in attendance at the meeting.

The **Fillmore-Saline County Medical Society** met at Friend, June 9, over a dinner at the Methodist church, Drs. Rodney Johnson and Frank Hamilton being hosts.

The program was "Believe It or Not." Each doctor related his strangest case. If they were not all true and tried physicians, it would be hard to believe some of the strange happenings which sooner or later come to the life of a doctor.

One doctor related an instance in his early days of practice, which made more than a passing impression on the writer. For in his own life he had a similar experience, keeping it hidden in his memory. And one time he was consulted by an old man, who confessed that he had a like revelation, and the fear gripped him that he was losing his mind. He was acting on the accepted belief that if a person has a visible presentment, the power of reasoning was slipping. On account of this belief, untold presentments are locked in the forgotten mind.

All physicians have observed people die, the greater number passing out in coma. A few at the threshold of death see things which the natural eye cannot grasp. Some act when they die as if they saw or heard something across the divide, giving unspeakable joy. Others as they pass to the beyond have seemed to peer through a dark curtain and have drawn back in terror and a hopeless fear written on the face, or giving way to words of despair. With this much of a preface we will hear the doctor's story.

He said one early morning he was called from an inviting bed to a cold drive five miles south of his home town. While dressing his sleepy self, he thought what poor judgment he exercised in life to get himself into a profession that would not allow him to sleep when he wished to sleep, to eat when he wished to eat, and would cause him to die before he wished to die.

Finally on his way, the cool air fully awoke the man known as a family doctor. He could distinguish objects along the way, as early dawn was creeping from the east. But the way was so familiar he needed no helping hand of dawn to point out each bump in the road, or turn in the way.

Finally arriving at the farm house where illness called, he tied his horse to a cottonwood tree, and taking his medical kit, started on his inborn steps of mercy. A picket fence surrounded the farm home, which he followed to the gate. As he opened the gate, and it clicked back again in its latch, he saw the mother of the home coming down the walk toward him. He saw that half way between the house and the gate they would meet, and as the walk was narrow, he stepped to one side as the woman advanced to allow her to pass. As she did so, he spoke to her asking the cause of the call. She passed on down the walk saying nothing, which he thought strange.

He continued the short distance to the house, and the man of the home opened the door to greet him. The doctor was met with the words that he had come too late. On entering he saw stretched out dead on the bed the woman whose spirit he had just passed. He was told that she had just died four minutes ago, and the doctor knew that the recent patient had passed down the pathway never to return.

—A Doctor.

HUMAN INTEREST TALES.

Dr. R. L. Hook, formerly of Onawa, Iowa, has located at Lodge Pole, Nebr.

A McCook physician has been arrested charged with the illegal sale of narcotics.

Dr. M. J. Severin, Omaha, and Miss Irene Stafford, Bancroft, were married May 17.

Dr. F. W. Vennemann, Spencer, was severely injured in an auto summersault in May.

Seventy-nine were examined at the Crippled Children's clinic at Kearney the last of May.

Dr. H. M. Hepperlin, Beatrice surgeon, underwent a second operation within a year, recently.

Dr. E. J. Gillespie, Plattsmouth, has sold his equipment and will locate on the west coast this fall.

Dr. L. S. Pucilek, has located at Plattsmouth in succession to Dr. E. J. Gillespie, whose equipment he acquired.

Dr. C. G. Kirk, surgeon of the Veterans Hospital, Lincoln, has been granted a LL. D., by Creighton Law School.

Dr. B. F. Williams, gave the graduating address to the class of nurses at St. Elizabeth's hospital, Lincoln, May 31.

The office of Dr. E. F. Leininger, McCook, was robbed of some drugs, instruments and about $75.00 in money recently.

Dr. F. G. Kolouch, Schuyler, has gone to Prague and other Czech points for a visit and to get some postgraduate work.

The Douglas County hospital has been placed on the accredited list by the Council on Medical Education of the A. M. A.

Dr. Margaret Sullivan, Omaha, was elected president of the Nebraska Association of Medical Women at the recent meeting in Lincoln.

Dr. A. R. Mitchell, Lincoln, member of the Board of Trustees of the American Medical Association, has been elected president of the Board.

A Wisner, Nebraska, girl, Miss Hattie Toelle, a trained nurse with an A. M. degree, has been elected supervisor of the Yale School of Nursing at New Haven.

The Children's Health camp near Omaha, conducted by the Nebraska Tuberculosis Association and sponsored by the Lions Club, will be open during July and August.

Dr. and Mrs. J. B. Potts, Omaha, motored to Atlantic City and points in Virginia, in May. The doctor attended the American Otolaryngological Association meeting at Atlantic City.

Dr. Carlton Ernstene, whose parental home is Nebraska City, who has been a teacher in Harvard Medical School for six years, has become affiliated with the Cleveland Clinic.

Dr. O. M. Cope, until recently professor of physiology and pharmacology in the Nebraska University, College of Medicine, resigned to become professor of physiological chemistry at the New York Homeopathic Medical College.

Nebraska physicians of electic training, attended and took part in the National Electic Medical Association at Little Rock, Ark., June 21-24. Among Nebraska physicians who took part in the proceedings were Dr. Bertha M. Thompson, Lincoln, secretary of the section on obstetrics and pediatrics; Dr. J. D. Case, Lincoln, chairman of the section on public health; Dr. P. A. de Ogney, Milford; Dr. H. H. Johnson, Lincoln, who discussed sanitation; Dr. Samuel Metheney, Lincoln; Dr. Frederick M. Andrus, Lincoln.

The following physicians attended the postgraduate course in obstetrics given at the University of Nebraska College of Medicine early in June: Dr. J. N. Campbell, Stamford; Dr. Carmelo De Stefano, Omaha; Dr. F. M. Heacock, Lyons; Dr. I. W. Irvin, Auburn; Dr. A. A. Larsen, Homer; Dr. F. W. McCaw, Colon; Dr W. R. Neumarker, Columbus; Dr. G. W. Pugsley, Bayard; Dr. R. W. Tyson, Falls City; Dr. E. A. Warner, Blue Springs; Dr. Glen Whitcomb, Omaha; Dr. A. H. Webb, Lincoln; Dr. Harriet G. McGraw, Tryon; Dr. F. W. Faulk, Pierce; Dr. R. C. Gramlich, Walthill; Dr. J. D. Lutton, Laurel; Dr. J. W. Stockman, Red Cloud.

BOOKS RECEIVED

CLINICAL INTERPRETATION OF LABORATORY REPORTS, by Albert S. Welch, A. B., M. D., Clinical Instructor in Medicine in the University of Kansas School of Medicine, Kansas City, Kansas; Director of the Laboratory of the Alfred Benjamin Dispensary. Formerly Pathologist to the Kansas City General Hospital, etc., small octavo, 366 pages, with 16 illustrations and a frontispiece in color. Philadelphia, P. Blakiston's Son & Co., Inc. Price $4.00.

THE EXPECTANT MOTHER'S HANDBOOK, by Frederick C. Irving, A. B., M. D., Professor of Obstetrics, Harvard Medical School. With illustrations. 203 pages. Houghton, Mifflin Company, Boston and New York. Price $1.75.

ROSTER OF OFFICERS—1932

Arthur E. Cook, Randolph, President	1933
Adolph Sachs, Omaha, President-elect	1933
A. L. Miller, Kimball, Vice President	1933
A. J. Cameron, Herman, Vice President	1933
R. B. Adams, Lincoln, Secretary-Treasurer	1933

COUNCILORS

A. P. Overgaard, Omaha, Secretary	1933
H. J. Lehnhoff, Lincoln, Chairman	1933
W. R. Boyer, Pawnee City	1933
A. E. Cook, Randolph	1933
Homer Davis, Genoa	1934
H. E. Potter, Fairbury	1931
D. D. King, York	1934
W. J. Douglas, Atkinson	1931
R. D. Bryson, Callaway	1932
L. W. Rork, Hastings	1932
C. A. Selby, North Platte	1932
A. L. Cooper, Scottsbluff	1932

DELEGATES TO THE A. M. A.

R. W. Fouts, Omaha	1932

DELEGATES TO COUNCIL ON MEDICAL EDUCATION OF THE A. M. A.

J. S. Welch	Lincoln

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Lothar F. Egan	Hastings
Clayton Andrews, Chairman Surgical Section	Lincoln
Morris Nielsen	Blair

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PUBLIC ACTIVITIES

E. R. Hays, Chairman	Falls City
F. W. Heagey	Omaha
J. S. Welch	Lincoln
C. C. Tomlinson	Omaha
H. W. von Schulte	Omaha

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CONTENTS

Page
The Physiology of Mucous Secretion With Some Experimental Results on the Prevention of Ulcer With "Gastric Mucin," A. C. Ivy, M. D. 317
Indications For and Results of the Surgical Treatment of Pulmonary Tuberculosis, Thos. J. Kinsella, M. D., F. A. C. S. 321
Industrial Accidents and Chronic Arthritis, J. E. M. Thomson, M. D. 324
Some Psychological Principles Underlying Child Behavior, Herman M. Jahr, M. D. 328
Progress of Surgery, Herbert H. Davis, M. D., F. A. C. S. 331
Idiopathic Aplastic Anemia: Report of Case, Roscoe P. Luce, M. D., and J. Harold Lynch, M. D. 334
The Rabbit Ovulation Test for Pregnancy, Harry Vander Kamp, M. D., A. B., M. S. 335
Report of Delegates to Convention of A. M. A., Philadelphia, 1931, R. W. Fouts, M. D. 337
Rupture of the Uterus Through Cesarean Scar in the Second Month of Pregnancy, C. H. Waters, B. S., M. D., F. A. C. S. 339
In Memoriam 340
Minutes of the 1932 Annual Meeting 343

EDITORIAL—

Page
Dr. Herman von W. Schulte, Dean 348
"The Care of the Dying" 348
Social Insurance Undermines National Character 350
Secretary Illinois Medical Society on Crippled Children's Clinics 351
Fifty-two Years in Medicine—Dr. George J. Rubelman 352
Obstetrical and Gynecological Hints. No. VI 353
Dermatologic Hint No. VI 353
Editorial Paragraphs 353
Necrology 354
Notes of a Jaunt Along the Lower St. Lawrence 354
Women's Auxiliary President's Address 355
Auxiliary Notes 355
University of Nebraska College of Medicine Graduates of 1932 and Their Internship Appointments 356
Internships, Creighton University School of Medicine, Class of 1932 357
The Doctor in Literature 357
Tuberculosis Abstracts 357
The Societies 359
Human Interest Tales 359

THE PHYSIOLOGY OF MUCOUS SECRETION WITH SOME EXPERIMENTAL RESULTS ON THE PREVENTION OF ULCER WITH "GASTRIC MUCIN"*

A. C. IVY, M. D.,
Chicago, Ill.
(From the Department of Physiology and Pharmacology, Northwestern University Medical School.)

When one considers the secretions of the alimentary tract, one thinks of saliva, gastric juice, pancreatic juice, bile, and succus entericus. When one thinks of gastric or duodenal ulcer, one thinks of the acidity of gastric juice and the alkalinity of bile and pancreatic juice. One naturally fails to think of mucus as a secretion of the mucous membrane of the entire alimentary canal because so little is written concerning it in modern text-books and because so little work has been done on the physiology of mucous secretion and metabolism. Should not mucous secretion receive more consideration?

Anatomically, mucus-secreting cells are located in all portions of the mucosa of the alimentary tract. In the mouth, mucous glands are found everywhere including the surface of the tongue. In addition to this, considerable mucus is secreted by the submaxillary and sublingual glands.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 26, 1932.

In the esophagus, mucous glands are present in the epithelium. In the stomach the entire surface epithelium is made up of mucus-secreting cells. In the mucosa of the cardia and pyloric antrum, deeper lying mucus-secreting glands are found. In the intestine numerous goblet or mucus-secreting cells are interspersed between the epithelial cells. In the colon are found many goblet cells and deeper lying mucus-secreting glands.

These anatomic facts are pointed out to indicate, first, that the secretion of mucus probably plays a significant role in the economy of the digestive tract, and second, that the physiology of the secretion of mucus deserves more attention than it has received.

It is known that mucus is secreted primarily in response to mechanical and chemical stimuli. In the case of the submaxillary gland, the secretion of mucus is subject almost entirely to reflex nervous control. In the case of the stomach, the application of dilute acids, irritants to and the mechanical massage of the mucosa definitely increases the secretion of mucus. Under basal conditions the mucus is quite thick, but when formed rapidly in response to an irritant, it is more thin in character. Recently workers in Professor Babkin's laboratory have obtained certain evidence suggesting that the secretion of mucus by the stomach is under the control of the autonomic nervous system. On stimulating the vagi and splanchnic nerves, they found an increase in the formation of mucus (Baxter: *Proc. Soc. Exper. Biol. and Med.*, 29:511, 1932; Vineberg: *Am. J. Physiol.*, 96:363, 1931). However, further work is required to settle this question, since we failed several years ago to observe an increase in mucous secretion by a pouch of the pyloric antrum following the ingestion of a meal (Ivy and Oyama: *Am. J. Physiol.*, 57:51, 1921). The investigation of the secretion of mucus by the colon conducted by Flourey (*Brit. J. Path.*, 11:348, 1930) shows that nerves play only a minor role, if any. However, chemical and mechanical irritation of the colon call forth a copious flow.

Mucus comes from the preformed mucin granules in the cells. Continuous irritation or stimulation depletes the cells of mucin granules. Hence mucin is formed and stored by the mucous cells. The fact that mucin is stored in the cells makes it possible to extract mucin from mucous membranes. In this connection it is interesting that Drs. Fogelson and Fenger report that the mucin content of hog's stomach linings contains about 50% less mucin in the summer than in the winter. This indicates that there may be a seasonal variation in mucin metabolism.

The functions of mucin are physical protection and lubrication. It may in part serve as a buffer against irritants. In addition, it may have other functions.

Very little is known concerning the metabolism of mucin. The problem is now being attacked. The results may prove to be of considerable pathologic and clinical value. This is indicated by the following facts and preliminary observations. Glycuronic acid (glucuronic acid) is referred to by biochemists as a possible detoxifying agent in that it combines with certain substances such as phenol, cresol, indol, skatol, etc., and possibly bile salts, which compound is eliminated into the urine. Glycuronic acid is one of the building stones of mucin. Since the secreted mucus is digested and reabsorbed for the most part in the gastro-intestinal tract, there is an internal circulation of mucin or of the building stones of mucin. This means that the glycuronic acid resulting from the digested mucin is available for "detoxifying" purposes. In this connection, Dr. C. O. Miller has studied the effect of borneol on dogs. Borneol is a substance which combines with glycuronic acid and is eliminated in the urine as borneol glycuronate. He found, first, that gastric mucin protects dogs from a fatal borneol intoxication; second, that the feeding of borneol markedly decreases the amount of mucin secreted by the stomach and that ulcers of the stomach may result with gastritis and duodenitis; third, that glycuronic acid comes chiefly from the food and the digestion of mucus, and is not manufactured by the body at least in the presence of possible livery injury. In preliminary experiments, Dr. L. A. Crandall has found that mucin and chondroitin from cartilage, which is chemically related to mucin, has a beneficial effect in dogs with experimental liver damage (Jaundice and Eck fistula dogs).

It is known that mucus retards peptic digestion. It can be shown by a simple experiment that the most difficult layer of the gastric wall to digest is the epithelial layer containing mucin granules.

With the aforementioned facts and observations in mind, Dr. Miller has suggested the following tentative working hypothesis in regard to the etiology of gastric ulcer; namely, that gastric and duodenal ulcer may be due in part at least to a disturbance of mucin metabolism. That is, in the ulcer patient, some factor operates to use glycuronic acid excessively or to prevent glycuronic acid from being formed, so that glycuronic acid is not available to build mucin in sufficient quantities to meet the local cellular demands in the gastro-intestinal tract. This demand would be greatest at the points of greatest mechanical and chemical irritation and at points where the mucous cells are actively proliferating as occurs about an acute ulcer or erosion. Obviously, if the newly formed mucous and connective tissue (contain a mucoid) cells about an acute ulcer do not contain their normal complement of mucin or mucin-like material, they will be more readily digested than otherwise. The administration of mucin would meet the deficiency.

Much experimentation will be required to test the validity of this hypothesis. One is able to find only a few references in the literature on the relation of mucous secretion to ulcer formation. Vineberg (*Am. J. Physiol.,* 96:370, 1931), a student of Prof. Babkin, suggests that peptic ulcers may be found to be correlated with a lack of function of the mucoid cells. Whitlow, in my laboratory, has found that dilute hydrochloric acid applied to the pyloric antrum markedly increases the formation of mucus and that if the mucus covering the mucosa of the pyloric antrum is wiped away, acid will cause bleeding sooner than if the mucus is not wiped away. It was found in Pawlow's laboratory that the application of silver nitrate to a pouch of the fundic portion of the stomach increases markedly the amount of mucus secreted which was interpreted as a protective mechanism. Kaufman (*Am. J. Med. Sci.,* 135:207, 1908) is the only one who has attempted to study mucous secretion by the stomach clinically in ulcer patients. He came to the conclusion that mucus was decidedly lacking in the stomach contents of peptic ulcer patients. He treated patients by lavaging the stomach with a dilute silver nitrate solution and explained the relief of pain to the excessive amounts of mucus formed in response to the action of silver nitrate, which, however, may have been due to other factors. Leriche (*J. de Chir.,* 38:465, 1931), a French surgeon, has suggested that mucus secretion may be at fault in "peptic" ulcer patients. De Takats and Mann (*Ann. Surg.,* May, 1927, page 698), have transplanted portions of jejunal mucosa into the lesser curvature of the stomach and obtained ulcer formation, and in some cases a marked increase in mucous-secreting cells. They suggested that "this observation might be interpreted as the development and possibly failure of the protective elements in the mucosa." Berg and Jobling (*Arch. Surg.,* 20:997, 1930) have suggested that the ulcers which occur spontaneously in biliary fistula dogs may be due to a disturbance of mucin metabolism. We have been unable to date to find other references in the literature suggesting a possible relationship between mucin metabolism and secretion and peptic ulcer. In this connection it is interesting that Merck's handbook a number of years ago listed a mixture of biliary mucin and sodium bicarbonate for use in "peptic" ulcer. But we have been unable to find in the literature a report suggesting why biliary mucin was used in the mixture. It is interesting from a historical standpoint that the Egyptians used chopped ostrich stomachs, and early American physicians used ground chicken gizzards empirically as an organotherapeutic agent for "indigestion". Today the use of stomach preparations is experimental rather than empirical. We are all familiar with the use and effectiveness of certain stomach preparations in pernicious anemia.

Although in 1920 Dr. Oyama and I studied the mucous secretion of the pyloric antrum and Dr. Whitlow and I studied the protective qualities of gastric mucus, no idea of the therapeutic use of mucin entered our minds. This idea, however, occurred to Dr. S. J. Fogelson, who first tried to find a method to increase mucous secretion in the stomach. Failing in this, he decided to determine the effects of feeding it. He found that the "gastric mucin" he prepared from hog's stomach had a "buffering action for the free acid of gastric juice," had no deleterious action on dogs, and being a physiologic substance, had no effect on body chemistry.

Since, according to my views, experimental therapeutics in the end is the test of physiology, we have tried so far to determine the prophylactic value of "mucin" in certain experimental conditions, which lead to the production of ulcer in animals, and Dr. Fogelson has administered "gastric mucin" to "peptic" ulcer patients. Dr. Fogelson and others have reported that "gastric mucin" has a definite useful palliative value in peptic ulcer, and we have evidence which indicates that it has a prophylactic value in certain experimental types of duodenal and jejunal ulcers.

I shall briefly summarize our findings on animals. It has been reported by several investigators that from 40% to 60% of dogs with biliary fistula develop duodenal ulcers and occasionally gastric ulcers. We operated ten dogs and six developed ulcers. We also operated seventeen dogs and gave them "gastric mucin", none developed ulcer and their appetites continued normal, a very little loss of weight occurring. A study was made in which alkalies were compared to "mucin". Alkalies prevented the formation of ulcer, but the alkali dogs lost more weight than the mucin dogs. Judging from the loss of weight and general condition, "mucin" therapy was more beneficial than "alkali therapy" in the biliary fistula dogs. (Kim and Ivy: *J. A. M. A.*, 97:1511, 1931; *Proc. Soc. Exper. Biol. and Med.*, 99:686, 1932). Mann and Williamson found in dogs that if an end-to-end gastro-jejunostomy is performed in dogs and the bile and pancreatic juice drained into the lower ileum, jejunal ulcer occurs in from 90% to 100% of the dogs. The ulcers generally appear in from three to four weeks. We (Dr. Fauley and Ivy) operated twenty dogs. The first four were given a small amount of "mucin", all four developed ulcer in from 4 to 11 weeks. The remaining 16 were given larger doses of "mucin". Six developed ulcer. In the dogs on mucin, ulcer occurred in only 37% or 50%, depending on the analysis of the data. We then operated six dogs and gave them 4 grams twice daily of equal parts of sodium bicarbonate and calcium carbonate. All six dogs developed ulcer in from 7 to 17 weeks. We now are following a series on a mixture of "mucin" and alkalies. We have also added raw pancreas to the diet to improve their nutrition, since raw pancreas improves the condition of depancreatized dogs. We have fourteen such dogs that have been operated from 4 to 16 weeks and to date an ulcer has not appeared in any of them. What the future will reveal remains to be learned. However, it now appears as if we shall be able to either prevent or to markedly delay the development of ulcer that develops in Mann-Williamson dogs, an experimental ulcer that appears to be analogous to post-operative jejunal ulcer in man.

Since at the present time we have no experimental method for producing gastro-duodenal ulcer in animals that is directly analogous to or approximates the natural history of ulcer in man, other than post-operative jejunal ulcer, the possibilities of experimental therapeutics of "peptic" ulcer in animals are limited. Therefore, in view of this fact, it is necessary to test the possibilities of any new therapeutic agent or regime for "peptic" ulcer on man after it has been shown to be non-injurious. Further, one must recognize the limitations and the difficulties of evaluating therapeutic results obtained in man in certain diseases and particularly in a disease like peptic ulcer in which the natural history is so variable.

I have not had an extensive personal experience in the experimental therapeutic use of "gastric mucin" in peptic ulcer in man, although I have seen patients that have responded better to "mucin" than to any previous therapeutic management. The reports of Fogelson, Atkinson and Brown, Cromer, Jenkinson and Gilbert indicate that mucin has a definite palliative action in peptic ulcer in the majority of cases. From the reports of these clinicians and of others who have reported to the "Gastric Mucin Committee", the product has given relief when other managements had failed or had not been well tolerated. Eleven cases of post-operative jejunal ulcer have been treated and relieved of symptoms, which falls in line with our experimental work on dogs. I am interested personally in the question of recurrences. It is our hope that those patients who continue to take mucin indefinitely will not suffer from recurrences. The records show that of 152 cases on "gastric mucin", nine months or longer, three recurrences have occurred. Time and long continued effort only will answer this question. This is the only way that I know of which will answer the question of whether or not gastro-duodenal ulcer in man is in any way related to mucin metabolism.

Even if our hopes in regard to the value of "mucin" in the therapy of ulcer suggested by Fogelson should prove in the future to have been not well founded, we will at least have been stimulated to learn more concerning the metabolism of this important physiologic secretion.

BLEEDING OF BENIGN ORIGIN

Leo Kessel, New York (*Journal A. M. A.*, Oct. 10, 1931), states that patients who present the ominous symptom of hemorrhage may occasionally suffer from a benign lesion, and the disease may run a propitious course. The diagnosis of benign bleeding, however, must never be hazarded until all available examinations have excluded the presence of a blood dyscrasia, malignant neoplasm or chronic inflammatory process, such as tuberculosis. It is unwise, furthermore, to advance this diagnosis unless the benign lesion can be visualized by some direct method of examination, such as bronchoscopy or proctoscopy. Indeed, even in cases in which a malignant process has been excluded and a benign process demonstrated, the cautious diagnostician will proceed with the knowledge that the patient with a benign cause for bleeding may harbor a malignant disease as well. Although conscious of all these evil forebodings, the author presents a group of patients to illustrate the fact that extensive bleeding may result from a benign lesion and either completely cease or be prevented by local forms of treatment.

INDICATIONS FOR AND RESULTS OF THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

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PART II

THORACOPLASTY

The third and most radical group of collapse therapy methods includes the major surgical procedures of extrapleural thoracoplasty, extrapleural pneumolysis, and allied measures. Of these, extrapleural thoracoplasty is the procedure most widely used and deserving of the greatest consideration. It accomplishes collapse and compression of the lung by collapsing the bony chest wall by the removal of a series of its rigid supporting ribs. The collapse comes more or less suddenly and is associated with considerable trauma to the patient and when once done is irrevocable. For this reason the patient chosen for this type of procedure must present a chronic fibrotic type of disease and must have demonstrated considerable resistance against the tuberculosis so that the operative procedure may not produce an exacerbation of the disease. He must also possess a good or nearly good contra-lateral lung without too much evidence of fibrosis so that enough available breathing space will remain to carry the patient for the rest of his life. Much of the success of the operative procedures depends upon the proper selection of the patient. The individual with an exudative type of tuberculosis seldom benefits by this type of procedure. Ideally, there should be no evidence of clinical disease in the contra-lateral lung, though clinically this is rarely true. We must usually be satisfied to accept the patient who has had no evidence of x-ray activity in the good lung for a period of several months or a year. With the more graded types of thoracoplasty, particularly as performed under local anesthesia, it is possible to accept patients for surgery who do not fully meet the above outlined ideal conditions. In general, however, any activity in the good side is to be avoided if best results are to be obtained, because any re-activation or extension into the good side not only reduces the chances of permanent good results but may even seriously jeopardize the patient's life.

The patients chosen for extrapleural thoracoplasty will include those with chronic, fibrotic disease confined to one lung or largely to one lung who have demonstrated evidence of their resistance against tuberculosis and particularly that group whose recovery is delayed or prevented by mechanical factors, such as cavities. All of these patients, I believe, or at least the majority of them should have been tried for artificial pneumothorax first. The majority have tried to obtain clinical results by all other methods and have failed. They usually present intrapulmonary cavitation with positive sputum, frequently in large amounts and without surgical aid, have little to expect except a continued evistence as an infectious positive sputum invalid or semi-invalid. This group will include patients presenting:

1. Extensive unilateral disease.
2. Unilateral cavitation, single or multiple.
3. Profuse or repeated pulmonary haemorrhage.
4. Tuberculosis or secondarily infected empyemas most frequently complicating artificial pneumothorax.
5. Less extensive disease particularly confined to the upper lobe not collapsed by artificial pneumothorax, in whom limited thoracoplasty may give results, and still leave a partially functioning lung below.
6. It may be used also to replace artificial pneumothorax which has been lost or discontinued or is giving incomplete results; or
7. To relieve cardiac and respiratory embarrassment due to excessive mediastinal displacement in old chronic disease with marked deviation and angulation of the tracea and vessels.

The field for extrapleural thoracoplasty in pulmonary tuberculosis is limited to approximately 5 per cent of patients with pulmonary disease admitted to the sanatorium. Extension of this field much beyond this figure will begin to include more and more questionable cases with an attendant excessive surgical risk and poorer end results.

No discussion of this type of collapse therapy is complete without considering the conditions which may render attempts at surgical compression inadvisable. Some of these are of relative importance only while others may absolutely forbid any attempts at radical surgery. Listed somewhat in the order of importance they may be stated as follows:

1. Terminal tuberculosis disease. If the patient has already reached the stage where he has lost his resistance against tuberculosis, no form of collapse therapy will save him and attempts will serve only to discredit the method.
2. Apparently fatal extrapulmonary disease, tuberculous or otherwise, including cancer, advanced renal disease, etc. In this group merely attacking the pulmonary tuberculosis does not alter the eventual prognosis.
3. Cardiac disease. All forms of collapse therapy add a greater load to that already borne by the right side of the heart. The more rapid and radical the collapse, the more important this consideration becomes. The type of cardiac lesion present and the

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degree of compensation are the important factors. This contra-indication however is still a relative one, being much more important for the more radical types of thoracoplasty than for some of the simpler methods. We have successfully performed thoracoplasties in multiple stages without difficulty in the presence of well compensated cardiac lesions of both congenital and organic types.

4. Extrapulmonary tuberculous lesions. The contraindication here is more or less relative depending upon the location, severity, and age of the lesion present. Intestinal and severe renal lesions are of far greater prognostic import than tuberculous lesions of the larynx, bone, joint, skin or anorectal region.

5. Age. While the extremes of age are ordinarly to be avoided in thoracoplasty work, there may be individuals in the extreme age groups who present indications for thoracoplasty which may not be disregarded. The range in this series has been from eleven to sixty-four years.

6. Other factors including general condition, temperament, dyspnoea, vaso-motor tone, age of the tuberculosis, secondary complications and probable prognosis must be given due consideration before thoracoplasty is undertaken.

Because of the extensive nature of the operative procedure necessary in order to obtain adequate or nearly complete collapse, the operation should be divided into several stages to be determined more by the patient's reaction. response and general condition than by the surgeon's preference or convenience. The patient, not the surgeon, should be given first consideration. Unquestionably. the risk of operative interference in these patients, particularly those who have had a great deal of disease, can be markedly reduced by adopting a multiple stage procedure and performing it in a manner which traumatizes the patient to the minimum. While all of the earlier literature stated emphatically that a very rapid operation was necessary, it likewise mentioned the marked shock and reaction which accompanied the operative procedure. Excessive speed and excessive tissue trauma go hand in hand. We now know that gentleness and care in handling tissue is amply repaid by the patient's postoperative comfort and lack of serious reaction. Our experience has taught that operative time, particularly under local infiltration anesthesia is probably the least important consideration of the whole procedure. We have been through the mania for speed in the early stages of our thoracoplasty series and have long ago abandoned it.

We have no routine for number, sequence or position of the various stages of the operation, but vary this as all of our other procedures, to meet the individual requirement of each patient. We do the majority of our work under local infiltration anesthesia. but always have a trained anesthetist present and do not hesitate to supplement it with nitrous oxide or ethylene if necessary or advisable and work under inhalation anesthesia
altogether at times if local conditions warrar
We now favor a three stage posterior thorac
plasty to the ordinary two stage and are doing
much more radical and extensive type of tho
acoplasty, particularly in the upper ribs, som
what closer to the Brauer subscapular thorac
plasty than the Wilms-Sauerbruch paravertebr
type. Antero-lateral thoracoplasties are used fr
quently and are performed in one or two stage
depending upon indications. Upon occasion th
is done as a second or third stage of the seri
before the posterior thoracoplasty is complete
This is particularly important in the patient whos
thoracoplasty is performed to close huge apic
cavity or large empyema pocket. Here it is d
sirable to obtain maximum collapse of the tho
acic cage, particularly above as rapidly as is co
sistent with the patient's safety and before r
regeneration has occurred to more or less fix th
chest wall. The utilization of antero-lateral tho
acoplasty early in the series, as the second or thir
stage procedure here presents distinct advantage
If the intercostal nerves above the seventh hav
been crushed posteriorly at the time of the o
iginal operation, the antero-lateral resections ma
be done subsequently without difficulty under lo
cal infiltration anesthesia. Parasternal section c
resection of the upper six cartilages as advocate
by Gardiner may also be used to advantage earl
in this way. If, at the time the posterior opera
tions are performed, the surgeon has reason t
anticipate a possible delay between the variou
operative sessions. it is quite important to attemp
to delay regeneration posteriorly by the applica
tion of Zenker's solution to the periosteal bed a
advocated by Head.

Our usual time interval between stages i
about three weeks, though this is varied widel
depending entirely upon general and local con
ditions in the patient. A complete result is no
obtained until cavities are closed, symptoms con
trolled or empyema pockets obliterated and thi
may require time, multiple operations and eve
at times re-operation. One technical point whic
must always be borne in mind where extrapleura
thoracoplasty is being performed over a pneumo
thorax, hydro or pyopneumothorax or pyothora
is the necessity for relieving intrapleural pressur
before. during or after the operation to preven
or relieve cardio-respiratory embarrassmen
which otherwise might prove very serious.

RESULTS

The results obtained from extrapleural thor
acoplasty in the treatment of pulmonary tubercu
losis and tuberculous empyema are dependent t
almost as great a degree upon proper selectio

of patients, proper preoperative and postoperative care as upon the extent of the surgical collapse itself. If only very favorable cases are undertaken then the resultant mortality will be low and favorable results high. If, on the other hand, the possible advantages of surgery are extended to as wide a group as possible, offering them to all of those presenting a legitimate chance for a good permanent result, in spite of the risk, the figures will show a higher mortality rate with a lower percentage of eventual good results but in the aggregate, more patients will be benefitted than under the more conservative regime. Mortality figures also in tuberculosis surgery calculated only for a two or three week postoperative period are very grossly misleading as they are not complete. We know that tuberculosis may be stirred up by an operation and still not result in the patient's death for weeks or months following and yet the death is directly related to the surgical intervention. From our Glen Lake series of 418 operations upon 181 patients over the period of 1922 to date, we have a two week mortality of 7.2 per cent, one month mortality of 10 per cent, three month mortality of 10.6 per cent, one year mortality of 13.9 per cent and a total mortality for all time, all causes of 44 patients, or 24.3 per cent calculated upon the basis of patients operated. If this mortality is reduced to an operation basis, these figures are correspondingly reduced to 3.2 per cent for two weeks, 4.3 per cent for one month, 4.5 per cent for three months, 6 per cent for one year and a total of 9.1 per cent.

It is evident, therefore, that extrapleural thoracoplasty carries with it a very definite risk so it is not to be recommended too lightly. On the favorable side of the results in this group we have more than 52 per cent of these patients working or able to work and many more of the more recent patients whose present results are such that we are confident that they will be rehabilitated though the time period is yet too short. When one considers the state of these patients before undertaking thoracoplasty, their chances of recovery and rehabilitation and remembers that almost all of them have attempted to obtain results by every other possible means without success, then these figures appear more favorable than ever. No better recommendation can be had for the results of this procedure than the attitude of the patients around the sanatorium who have watched some of their roommates and friends rehabilitated by it. We now never find it necessary to talk patients into the procedure. We recommend it where it is indicated and then allow the patient to make up his own mind. It is very seldom that one refuses to consider it favorably.

From time to time, particularly in the older portion of the thoracoplasty series where a less radical type of collapse was performed, we are confronted by the patient who has obtained an incomplete result from his thoracoplasty either because of inadequate operation, too great a delay between stages with consequent regeneration, rigidity of the pleura, flexibility of the mediastinum or other factors which interfered with the closure of cavity and control of symptoms. Additional operation with more extensive rib resection plus removal of the regenerated ribs posteriorly may be followed by additional collapse with satisfactory clinical results. Others in addition to this may require extrapleural or extraperiosteal filling or external compression in order to close the cavity. Some of the larger empyema pockets, particularly those filled with large amounts of heavy caseous material which cannot be aspirated and which prevent a fusion of the parietal and visceral pleura with obliteration of the space may necessitate a complete unroofing followed by packing and healing by granulation with secondary plastic closure before a complete result is obtained. Extrapleural pneumolysis with muscle, fat or gauze filling may be utilized for a limited lesion particularly cavity either before or subsequent to extrapleural thoracoplasty. Such procedures are not without their complications nor are the results always perfectly satisfactory though they may be of definite aid in well chosen instances.

CONCLUSIONS

Surgical collapse therapy measures constitute an extremely valuable addition to our available methods of treating pulmonary tuberculosis. They offer to the group of patients suitable for such interference, chances of recovery far in excess of that which they have to expect without such aid. All patients suffering from pulmonary tuberculosis should be carefully considered from time to time in order to determine if proper indications for collapse therapy are present. If such indications are found, the proper type of collapse should be instituted promptly before extension of the disease or complications render the patient unsuitable for any such help. It has been truly stated that no brighter star of hope has ever appeared on the horizon of the patient with extensive tuberculosis than the collapse therapy measures at present available.

"Did the doctor treat you?"

"Treat me! I should say not! He charged me ten dollars!"

INDUSTRIAL ACCIDENTS AND CHRONIC ARTHRITIS*

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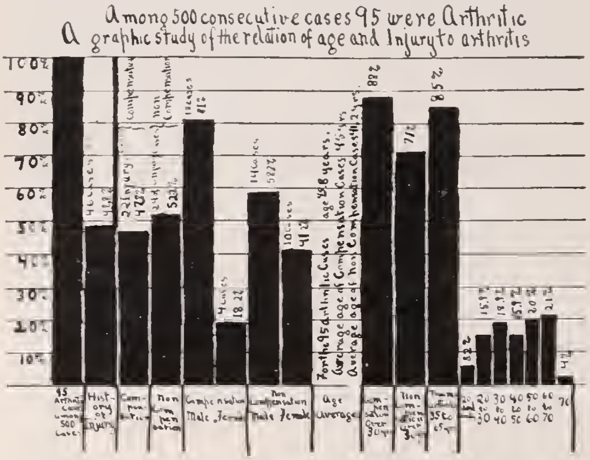
Of the last five hundred cases treated by our orthopedic clinic for deformities, injuries, and diseases of the extremities and spine, ninety-five or 19% suffered from arthritis. Of these ninety-five cases, fifty-seven or 60% were males, and thirty-eight or 40% were females. The incidence of the attack of arthritis either had its onset, or was aggravated by, an injury to some part of the body in forty-six or 48.8% of this group of cases. Of these forty-six cases, twenty-two or 47.8% of the injury cases were injured in the course of their employment and became compensation cases, while twenty-four or 52.2% were not injured during the course of their employment and were not compensation cases.

Of the twenty-two compensation cases eighteen or 81.8% were male and four or 18.2% were female; while of the twenty-four non-compensable traumatic arthritic group there were fourteen or 58.8% male and ten or 41.2% female.

A study of the ages of these chronic arthritics is extremely interesting. They range from thirteen to seventy-four years, the average age being forty-five and eight-tenths years. Five cases or 5.2% were under twenty; between the ages of twenty and thirty there were fourteen or 15.9%: between the ages of thirty and forty there were eighteen cases or 18.9%; between the ages of forty and fifty there were fourteen cases or 15.9%; between the ages of fifty and sixty there were nineteen cases or 20%; between the ages of sixty and seventy there were twenty cases or 21%; four cases were over seventy, or 4%.



The most interesting fact developed by this analysis is that 85% were disabled by arthritis during the most productive period of their lives —that is, between the ages of thirty and sixty-five.

The group of arthritics in which a history of injury is a complicating or aggravating participator gives additional light with respect to age as a factor to be reckoned with, for among the compensation cases the average age was forty-five years, and 88% of these were over thirty years of age. Among the non-compensable cases the average age was forty-one and two-tenths years, and 71% of this group was over thirty.

The results of treatment cannot be analyzed in an accurate manner as the study constitutes many cases now under treatment, but we have progressed with them sufficiently to have developed some very well founded ideas in regard to this subject which are briefly:

First; that non-compensable traumatic arthritic cases react best to treatment. They have ultimately less permanent partial disability and recover more quickly than any other group. Although the age average is high (forty-one years) the disability is usually limited to the member injured. They respond most willingly to every effort to relieve their symptoms. They are most cooperative for usually they are exceedingly anxious to get back on the job. With accurate treatment of every contributing factor they give most satisfactory results.

Second; That compensable chronic arthritis, though the etiologic factors are directly similar to the first group described, is very difficult to handle. They are most all males who give a history that prior to their injury they never felt an ache or a pain. There is a profound tendency to extend their period of total disability, the ultimate partial permanent disability is at best high; very often they are less cooperative and indifferent to their progress.

Third; The chronic arthritis cases without a history of injury include many so-called "old-timers" with multiple joint involvement and deformities (however, a large number of the traumatic cases, particularly those who have had attacks of arthritis prior to their injury, and some who have never suffered prior to their injury, have multiple joint involvement). These "old timers" are usually long sufferers with varied symptoms. They require an even more accurate diagnosis as to etiology than any other group and though the symptoms may favorably respond to treatment, they require a long course of treatment and often have considerable disability due to long standing deformity.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 26, 1932.

Fourth; Patients over thirty years of age employed in farm trade, or labor occupations, are particularly susceptible to the development of arthritis following an injury and their susceptibility increases as their age advances towards sixty-five.

Fifth; Though injury is blamed very often as the cause and excitor of arthritis and was from the history the aggravating factor in nearly fifty per cent of our series, it is my opinion that injury like other pathological disturbances may be only an incidental factor to the attack. For if the history of each case was carefully analyzed every case of chronic arthritis has some one or more exciting or agitating predisposing diseases, infections, injuries and deformities preceding it. It may be a cold, an attack of influenza, a sinus, a disorder of the cardio-vascular or renal systems, a gastro-intestinal or endocrin disturbance or even persistent bad posture, scoliosis, or a static foot disability. In other words, injury bears the brunt of ailments too often, it is an easy diagnosis to make. but unless the other factors are considered in the course of treatment the result will be disappointing.

Practically every individual over thirty years of age harbours numerous foci of infection, particularly above the collar. Few men employed in industry or in any other walk of life know anything about the hygiene of the mouth or nasal pharynx and the allied sinuses. Their teeth are uniformly bad. caries, pyorrhea, receding of the gums, redness and chronic gingivitis, are commonly found. When dental work has been done it is usually of an inferior character, consisting of poor fillings permitting the retention of numerous devitilized teeth and crowns to which are often attached horrible fixed bridgework, all of which have profound influence in contributing to a foul, unhealthy atmosphere of the oral cavity. On opening the mouth wider, the pillars are found to be red and beefy, the pharynx and nasal pharynx are inflamed and gummy with stringy secretions and pus. With passing years the picture in the mouth becomes more deadly and gruesome. Constantly when awake or asleep they swallow this cesspool material which if withdrawn from the fasting stomach in the form of muco pus, yields bacterial flora morphologically similar to that found in the mouth, nose or throat. From the fasting stomach the infection may be carried directly into the gall bladder and through its ducts to the liver; or down into the intestinal tract to infect other organs. Fortunately, bacteria entering the active digesting stomach are killed by the gastric secretions. However, the stomach is only active a portion of the day.

The numerous careless fillings that plug the decaying teeth surfaces are a source of spreading mouth infection and the removal of a nerve from a tooth under any circumstances I consider bad practice. No surgeon would ever consider operating on an osteomyelitis of a long bone and attempt to remove all the pathological material without infecting the healthy bone that would necessarily be opened up during this procedure, and who of you would attempt to cement up the bony defect and expect the patient to recover. Teeth are but bone, or a glorified calcium deposit in connective tissue with a hard specialized epithelial covering. Decay of the teeth is a form of osteomyelitis or at least a condition very similar to it. Decayed osteomyelitic cavities in teeth will not (but for a very limited time, no matter how well they are saturated with antiseptics) tolerate a plug in the hole damming up an infective process. Seldom have you seen inlays or fillings removed without recognizing the fetid odor of the localized pent-up infection in sequestrated degenerating bony substance, and yet this practice is accepted as proper. If it were adequate, then these plugged holes would last forever. but instead they continually break down under the filling. A surgeon who would deliberately remove the nutrient artery and nerves of a long bone would expect a sequestrum to form and dead bone develop. Such an operator would be guilty of malicious surgery and mal practice, yet there are dentists who delight in killing the nerve of a tooth, taking the nerve out, and with it the nutrient artery leaving a dead sequestrum on which to hang a crown with which to tie down permanently a dirty piece of foreign material in the mouth in the form of a bridge. Fortunately nature is good to us. The mouth can stand any kind of infection most of the time. It is only when the infection is swallowed or enters the blood stream and lights up an old process in some weakened organ or joint that it causes trouble.

The fact that nature is kind and gives us under normal circumstances immunity to the millions of pathological microbes in the mouth and upper respiratory tract, is no reason why we should try her unreasonably, for when unusual circumstances in the form of disease or injury occur these mighty hosts have an opportunity to work in the fertile new fields causing complicating factors to develop, of which arthritis is but one.

It is not my purpose to flay our brothers, the dentists, in these hard times, but I am firmly convinced that they are often aiders and abettors of arthritis by such procedures. I could say more in this regard but will desist for we as medical men have contributed but little to the cleansing up of the mouth, throat, and nasal pharynx. After all, we are held responsible and this is in reality our problem and one that has a tremendous influence on the health and happiness of the human race.

The Compensation Act of the State of Nebraska has been so interpreted and construed as to include arthritis when proof is offered that the arthritis is a result, a complication of, or has been aggravated by the injury. Consider the fact that the traumatic arthritic has an average age of forty plus, that he may harbour numerous foci of infection; has an unusually long period of disability when injured, and often has undue partial permanent disability as a result. Immediately you realize that the man of forty is a considerable liability to his employer and his insurance carrier, and the older he gets the greater risk he becomes.

With the present liberal interpretation of the compensation law it behooves employers to hire only younger individuals and closely scrutinize the physical fitness of those applicants as the rate of their insurance premium is based to a considerable degree on their past injury experiences.

One might say "Why should we, as doctors, worry over the older man in industry and his liability possibilities? If the law is liberal it enables us to collect larger fees and keeps such patients longer under our care." That is all quite true, but the trouble is that far too often many of these injured individuals have months of prolonged disability without a recognition of their arthritic probabilities and potentialities. Often they become dissatisfied with the attending physician, who, anxious to please and relieve the insurance carrier who has paid compensation far in excess of normal expectations and has been bled for as much of a fee as it would seem reasonable, tells the injured fellow that all possible has been done for him, that he is well, and should go back to work. This patient may be a malingerer, but far more often he is disabled and drifts from one doctor to another until untimately his teeth are pulled, his tonsils are removed, his sinuses are cleaned up, and lastly someone discovers he has arthritis, and that after all, arthritis is now his chief disability, and that after being pushed from pillar to post in search of relief he ultimately discovers that the real cause has been entirely overlooked so far as treatment of the condition is concerned.

Of course sometimes the removal of distant foci of infection and physical therapy will relieve the symptoms, but very often the seat of injury holds a secondary focus of infection that is very resistant to such efforts and an immunity must be built up against the particular microbes that effect the part involved. These are the cases that are difficult to cure and may frequently have extensive permanent disabilities.

Of all the compensation cases we handle, the arthritic injured or the injured arthritic form is the most trying group to give relief, keep happy, and ultimately bring back to a reasonable physical and mental state of rehabilitation. Perhaps they often realize that they may always be partially disabled and therefore the more disability, the more compensation they will receive. However, we cannot always dispel the natural human element of a desire to make as much out of a disability as possible, or to get something for nothing, particularly when the disability is clothed in the obscure symptoms of arthritis.

Since arthritis is such a complicating factor to injury and disease it behooves the medical profession not only to diagnose its existence early in the course of its progress, but to be apprehensive of the potential qualities in the patient which would allow it to develop, and treat these in an intelligent manner.

We recognize from long experience that any specific injury to the back or extremities has a relatively constant healing-time period, and the disability should end within quite definite limits for each injury, provided no complications develop. After thirty years of age arthritis is always a possible complication, therefore when a disability is present in an injured member after the recognized healing-time period, we must immediately suspect arthritis, granting other complicating factors are ruled out. Further, if during the course of normal convalescence the patient presents most of the accompanying attributes of an arthritis—such as being over forty years of age; having a foul mouth, nose or throat; gastro-intestinal disturbance; liver or gall bladder; heart or kidney disease; endocrin, metabolic, or blood adnormality, or any other debilitating factors, these should be corrected for fear they ultimately might be contributing to the disability by harbouring elements that might produce or aggravate an arthritis.

Lastly, those who develop arthritis at the time of their injury or who have previously had arthritis, must be treated in an active and efficient manner from the time the accident occurred if they are expected to recover from their disability.

TREATMENT

The measure to which the treatment of chronic traumatic arthritis is successful depends not only on the early recognition of the condition but also upon adequate treatment of the injury itself in association with treatment of the arthritis.

First: If the injury consists of fracture, sprain, strain or deep muscle, joint or bone bruising, rest and immobilization are essential for the injured part during the prescribed healing period.

Second: Physical therapy is a valuable adjunct to the restoration of function to the part involved.

Third: General upbuilding of the patient's physical forces not only has a favorable effect on the healing of the injury, but also definitely diminishes the impetus of the arthritis.

Fourth: All apparent foci of infection should, if possible, be cleaned up.

Fifth: From these foci that are cleaned up or examined, cultures should be made and a vaccine prepared from those cultures to which the patient is sensitive or has not apparently developed an immunity. Such a vaccine is truly a specific vaccine and should form a very valuable aid in combatting the arthritis. We have had very satisfactory results from the use of a stock vaccine developed by H. Warren Crowe of London, consisting of one hundred fifty-seven different varieties of streptococci that are known to have been specifically responsible for chronic arthritis, and also a staphylococcus albus which Crowe has identified and named Micrococcus deformans, due to the fact that he has found this associated with the rheumatoid type of arthritis.

In many cases we have found this stock vaccine sufficient to combat the arthritis and build up the immunity of the patient.

The important features of an effective vaccine treatment for this condition are (1) the vaccine must be specific, and if a stock vaccine, must carry specific organisms to which the patient is susceptible. (2) That the dose be small enough not to cause a protein reaction, which in these chronic cases is distinctly detrimental and causes exacerbation and aggravation of symptoms. (3) That the dose be large enough to cause a favorable reaction—that is, a favorable non-protein reaction. I mean by that, reaction of good feeling and alleviation of symptoms for a definite period of time.

It is indeed surprising how sensitive some of these cases are to vaccine therapy, as doses of a hundred bacteria are not uncommon in the obtaining of a favorable reaction and successfully allaying the arthritis process.

SUMMARY:

1. Traumatic arthritis should be suspected as a complication of every injury that amounts to as much as a sprain, strain, or fracture in or near a joint, in a patient over forty years of age, since practically every patient over forty has some chronic arthritis and it will very likely influence the healing of an injury near a joint.

2. Successful management of such a case is dependent upon the early diagnosis and recognition of the existence of a chronic arthritis at the time of injury and upon the early recognition of the possibilities of arthritis developing, especially when there are potential factors such as a general run-down condition, multiple foci of infection, exposure and advancing age.

3. The treatment should consist of (1) rest during the healing period. (2) physical therapy. (3) general up-building. (4) clean up of foci of infection. (5) specific vaccine therapy.

LET US COOPERATE

"Let me plead in no uncertain terms that we drop petty bickerings, forget childish jealousies, and like grown men, conscious of our greater responsibilities, cooperate to the end that our traditions may be preserved. While maintaining our individualism in the proper way, let us think clearly and act together sanely. The community will respond and give us our just due. Mass effort, rationally directed, can accomplish much."

—Slayton in *Kans. Med. J.*

CONTAGIOUS

"Going to the doctor?"

"Yes; I don't like the looks of my wife."

"I'll go with you; I don't like the looks of mine either."

SOME PSYCHOLOGICAL PRINCIPLES UNDERLYING CHILD BEHAVIOR*

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Behavior may be defined as the reaction of the individual to a given situation at a particular time and a particular location. We are not attempting here to set down standards of goodness or badness, of proper conduct or otherwise. To say that a child misbehaves under a given situation is not fair unless the explanation for his actions is taken into consideration. No child deliberately wants to be bad in the sense that the adult interprets badness, although there are very few children who would go out of their way to be good unless there is ample compensation for good behavior. There are certain primary factors inherent in the human race which recent work has shown definitely influences our conduct.

We are not dealing here with mentally ill children, but rather are we interested first in the psychological criteria of well children. Let us, therefore, discuss briefly some of these factors and examine them wherever practical to see how they may logically influence behavior. It is superfluous to mention the fact here that in considering the problem of child reactions one must view the organism as a whole, the host of a physical, mental and emotional makeup. These three phases of the child's life are intertwined, and collectively they contribute to form the personality of the individual. The environment may be considered the mold to his personality.

The primary urges or instincts with which the child is born may at times contribute to a person's behavior anomalies. A child who is hungry may steal food, a child who is thirsty will pay no attention to a prescribed water restriction, and a child who is sexually precocious may become an early sex offender. These basic drives, however, self preservation and race perpetuation, while undoubtedly of exceeding importance in severe delinquencies of later childhood and adulthood, they do not often, as such, operate as factors in the ordinary behavior problems one sees in children. Here other criteria play a more important, though a less complicated role. Of course, what follows may be interpreted in the light of the preservation instinct, but to me at least it seems that the factors here discussed, should be considered practically and only in their immediate effects on the child's make up.

The intellectual qualities of the child may be gauged comparatively early in life. The period when the baby begins to take notice of his surroundings, the age at which he is able to hold up his head, the age of sitting alone, standing alone, the period at which he begins to talk, walk, etc., all act as indicators of mental endowment. The brain of the child at birth is quite well formed, macroscopically, and grows more rapidly and constantly than any other organ in the body. The muscular movements are closely associated with intellectual growth and close study can afford a fairly accurate index of mental progress. Some of the characteristics that assert themselves early yet definitely, may give clues not only to the mental status of the individual child but may also offer prognostic indices of future behavior, depending upon the dealing with these characteristics.

1. It is human nature to desire and crave attention. This trait is well developed soon after birth and remains with us as long as we remain conscious. We do not boast about it, but this characttristic is the basis of all human strivings and scientific achievement. It is an unutterable yet constant desire to "amount to something", a desire to be noticed. I am sure that in the domain of crying babies, many more cry for attention than do for the well-known patented cathartic. The young child will obtain his attention by either being "smart" or by "showing off." He will eat everything to obtain praise or he will refuse every morsel of food and give his worried attendant cause for talking about him to everyone who has ears to hear. The growing child, like the ambitious adult, hates to be just average. Therefore, if he is not entitled to praise for his studies in the class room he will assert himself by shooting beans or by pulling the hair of the little girl in front of him. He will be the object of attention legitimately or otherwise.

2. Imitativeness. This is another trait that makes healthy mindedness. Early in infancy the child begins to learn tricks which are shown him by older members of his surroundings. He not only learns to "patty cake" from them, but also his speech, his gestures, his "wise cracks" and his manners. The capacity for imitation has offered a challenge to the deciples of hereditary behavior patterns, and one is sometimes at a loss to determine whether a child is a roughneck by

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heredity or by training. Similarly one at times hesitates to say whether a child is full of fears because his mother is nervous or because his grandmother was also nervous. When one takes this characteristic into consideration one can readily conclude what a tremendous role the environment plays in the human molding process. It is undoubtedly this trait that is responsible for the saying, "Show me your your friends and I'll tell you who you are."

3. Curiosity. It is human nature to be curious. From the time the baby is two or three months old he begins to investigate. He soon finds his hands, his feet, and other organs of his own body, and gradually extends his searchings into other members of the family and his surroundings. The child is by nature a philosopher. The questions he asks are frequently embarrassing to his elders, because they are unanswerable. Why is today Wednesday, where did Tuesday go to, etc. Delphian oracles would be stumped by a five year old child's questions.

It is not difficult to see how this characteristic may get a youngster into trouble. Let his curiosity extend to the mechanism of your gold watch, or to your expensive radio. Instead of dealing with a curious child you will find yourself struggling with a "destructive" youngster.

4. Imaginativeness. Curiosity and imagination go together. The child with an active mind will frequently wander off to fairyland. My own observations lead me to suspect the belief of some of the psychoanalysts that this is a subconscious wish on the part of the child to get away from reality. In the first place it is a universal trait of childhood. Secondly, it may be observed in the happiest of children. Fairy stories are a delight to every child the world over, and they are practically the same in every country. A youngster not infrequently has difficulty in distinguishing the real from the imaginary. Those hasty in judgment label the child a liar because of this trait. We can readily see how a child so disposed will create a situation where his elders, not understanding him, will keep talking about his everlasting lying and make the child important thereby and in turn give him good reasons to cultivate the habit.

5. Gregariousness. The child, like the grown up, enjoys associations with others. He is a social being and as such he early cultivates the attitude of give and take. He enjoys his playmates, and though it takes but a trifling incident to produce a break, the rupture is only temporary in scope. Trinkets are swapped and the friendship becomes as warm as ever. It is in the gregarious capacity that the child receives his lessons in fair play, in ability to mix and get along. It is here, too, that his social pattern is displayed. The standing he commands in the various games that he plays in early boyhood frequently reflects the citizenship of adult years.

Early in childhood the two sexes mix without awareness. Later there arises a diffidence which is frequently turned into open hostility. One sex avoids the other with equal caution though one suspects also with equally concealed curiosity.

Needless to say that neighborhoods are an important item during this period of plasticity and molding.

6. Hoarding. This characteristic hardly needs elaboration. The child has odious notions on the value of concrete objects. He will engage in bloody fights over a dispute of ownership of a topless tin can as readily as he would over an autographed base ball. Possession is the only criterion. Quality of articles is not nearly so important as quantity. Rusty nails, shiny buttons, rubber bands, paper clips, etc., are valuable property to a youngster. Bargaining and bartering in these objects are engaged in freely, each boasting of the new acquisition. Values change constantly with age and the objects assume gradually a more utilitarian form. The hoarding trait frequently extends to objects of real values and often may get the child into difficulties when he forgets the meaning and respect for personal property as it is understood in adult circles.

7. Hero worship. Hero worship begins at home, and begins early. The first attachment the child makes is to his parents. Every youngster feels and believes that his mother is the ideal woman and his father the strongest and the wisest of all men. Nor are children easily swayed from this belief. Disillusionment is frequently accompanied by a deep feeling of inconsolable disappointment. As the child grows in body and mind his hero assumes higher standards, measured usually by physical traits and appearances or extraordinary feats of valor and athletic achievement. He aspires with equal intensity to grow into a giant in the circus, a Tom Mix on the screen, a Lindberg of the air service, or a Capone of gangster fame. His hero worship gradually extends to a more sedate and substantial class, but models in the form of successful persons pervade his ambitions well into the period of adolescence and even to maturity.

8. Superstition. All persons at some period

during childhood, have entertained many superstitious beliefs. Every object early in the child's development is endowed with life, whether the object is animate or otherwise. The child who bruises his knee likes to punish the chair that hurt him. For that matter how many of us within recent times are innocent of non-religious expressions under similar circumstances? We not only damn the luck, but kick the chair to boot. Every incident in the life of the imaginative child assumes ominous import. Watch him avoid the cracks in the sidewalk. A step on one of the crevices is a sign of ill-attended fate. He counts white horses (this charm, alas, is rapidly disappearing) to bring good fortune.

Religion is taken very seriously, God being interpreted in a personal and humanistic light. God not only rewards virtue and punishes sin but in His Omnipotence he may at will convert a cat into a building or vice versa.

9. Love for adventure. The child loves not only the adventures of Tom Sawyer and Huckleberry Finn and the Alger boys, but frequently engages in escapades which give opportunities to act the adventurer. Investigation of different neighborhoods is frequently undertaken with much ado on the part of the group. Building tunnels and caves is the sport of every child of normal mental capacity. The robber game gives vent to the desire for adventure. One does not have to go far to surmise that while the spirit of adventure is a legitimate and desirable trait of childhood, it may carry a youngster quite out of the way and create a problem in behavior. Let him hitch-hike without the parents' knowledge to a distant town or let him in his robber play hold up a gasoline station and trouble is inevitable.

In addition to these human traits we must consider the emotions which influence the child's reactions in his daily contacts with those about him.

The child lives intensely. He takes no account of moderation. His emotions are easily aroused and response is elicited almost immediately upon the receipt of the stimulus.

His love life is simple and genuine, so are his hates. Frankness is at times brutal, but honest at the same time. He would just as soon tell you, "I like you," as he would, "I don't like you," or "I hate you." If those dear to him are in a fighting mood, he will say, "Don't be mad at him," instead of the adult command, "Don't fight."

The first object of the child's love are, of course, the parents, particularly the mother. Gradually this love extends to the other members of the family, then to objects that afford pleasurable diversion. These may be inanimate objects like dolls or other toys, or they may be domestic animal pets. The love for these objects as for immediate persons is genuine and intense, as can be judged by the result of their loss. Dolls have endearing names and a bird funeral usually brings out the entire child population in the block with flowers ranging from dandelions through hollyhocks and roses from the neighboring bushes.

Joy also is intense and frequently knows no bounds. The child is easily pleased. A stick of chewing gum offered gracefully to a young child will bring about a broad grin and a happy smile. It is true that these happy moods need frequent renewals by additional offerings but concrete objects are not the only stimulators. Praise on the part of those about him, or successful completion of a given task often produce pleasurable sensations that are more lasting in their effects.

Grief is an emotion which in the child is too frequently discounted as unimportant. This is a most unfair attitude to adopt because children are capable of grieving far more than adults. The child's philosophy is not based on reasoning. He lives in the present and has no conception of the future. The adult when faced by an unpleasant or an unfortunate situation can find solace in the fact that the feeling of discomfort or disappointment is only temporary. Conditions change. The child does not have a reasoning capacity for this sort of protection. His suffering is inconsolable, and one unpleasant incident may leave an emotional scar with permanently damaging results to his welfare.

Fear. Theoretically the only fear with which the child arrives in this world is that of falling, through loss of physical support. Practically, we seldom see a child at the age of say a year or two who does have a stock of pet fears which, on questioning, the mother eagerly enumerates. Regardless of how this emotion is acquired and cultivated its effect is at times devastating. The only description I can offer is by comparing the fear complex to a nightmare sensation.

Hate and jealousy. These two emotions are mixed in the child as they are in the adult. As a rule our hate extends to those of whom we are jealous and at the same time unable to squelch. It is doubtful in my mind whether the child engages in systematic or conscious hating. That we frequently encounter manifestations of jealousies of various kinds in the child one cannot deny. If it occurs it generally is based on usurpation of hitherto enjoyed attentions or privileges. In giving vent to expressions of jealousy of lengthy duration, children adopt various means and methods which generally assume anomalies in behavior. These behavior deviations may take the form of unfounded physical complaints such as vague abdominal pains with no physical findings to justify even a suspicion of organic pathology. Enuresis is a frequent habit traceable to concealed jealousy. Behavior problems of a social nature may also arise—truancy, stealing, shyness, pugnacity, all may appear as the result of the child's justifiable or unjustifiable feeling of jealousy and its accompanying hate.

PROGRESS OF SURGERY

REVIEW OF THE LITERATURE OF THE FIRST HALF OF 1932

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GASTRO-INTESTINAL DISEASES

Experimenting on dogs, Bollman and Mann(1) found that ligation of the common bile duct resulted in decreased resistance to the formation of peptic ulcers. In 64 animals, acute, subacute or chronic duodenal or gastric ulcers developed in from 5 to 295 days after operation. Only 23 animals so operated and living the above length of time died of causes referable to ligation of the common bile duct without showing gross evidence of peptic ulcer.

Following animal experimentation and its use in seventeen persons prior to abdominal operations, Steinberg(2) concluded that protection against peritonitis can be obtained by the intraperitoneal injection of dead colon bacilli. The immunizing material was given intraperitoneally daily on four successive days and operation was done on the day following the last protecting dose. He found the protection secured with heat-killed colon bacilli to be greater than that obtained with a mixture of the virulent organisms usually found in appendicitis and peritonitis. The protection secured is not a true immunity process, but a hyperleucocytosis and phagocytosis due to a coincident presence of polymorphonuclear leucocytes at the site of infection. The term hyperleucocytic pre-immunity was suggested for this process. This method was advised as a preparation for any operation on the intestinal tract.

Benedict, Stewart, and Cotner(3) have reported some very interesting experiments on dogs on the role of bile in high intestinal obstruction. This work was done at the University of Edinburgh. They were investigating why death is so much more rapid when the obstruction is just below the level of the entrance of the bile and pancreatic ducts than when the obstruction is above the ducts or lower down in the jejunum. They found that introducing bile into the bowel below the obstruction definitely prolonged the lives of the animals and kept the blood chemistry fairly normal. In other words, in these animals, there was no fall in blood chlorides, rise in non-protein nitrogen or carbon dioxide combining power of the blood, and the blood cholesterol remained normal. If the obstruction was eleven or twelve inches or more below the entrance of the bile duct, the giving of bile was unnecessary as bile was absorbed from the intestine above the obstruction. They also investigated in two dogs the question as to whether there are any changes in the bile itself after intestinal obstruction. There was no change produced in the cholesterol, salt, or pigment content of the bile.

When the chloride and water balance is maintained, the length of survival of an obstructed dog seemed to depend almost entirely on (a) the exact level of the obstruction below the bile papilla, and (b) the fat reserve.

Vicious circle vomiting may occur after gastroenterostomy in 2 to 0.4 per cent of cases. It is very difficult to treat. Donovan(4) has reported three such cases, who having been treated without success, were relieved by a very interesting surgical procedure, i. e.. doing a gastrostomy by the Witzel technique and inserting the tube down through the efferent loop of jejunum. Feeding is then carried out through this tube.

Rienhoff(5) has described an operation for duodenal ulcer in which he anastomoses the duodenum below the papilla of Vater to the stomach. To do this he first mobilizes this portion of the duodenum by cutting the peritoneum along its convex outer border. He has done this operation successfully on thirteen cases of chronic peptic ulcer in the last two years. He considered the advantages to be as follows: 1. This portion of the duodenum is physiologically better suited to receive the acid gastric juice than the jejunum. 2. So far a spontaneous ulceration of this portion of the duodenum has not been reported. Therefore, the tissues are normal and so easier to operate on. 3. This portion of the duodenum is more anteriorly situated and more accessible than the first and second parts. 4. There are no structures such as the common bile duct and pancreatic duct in the vicinity which may be injured during mobilization. 5. Marginal ulcer does not occur. 6. The transverse mesocolon does not have to be traversed and this eliminates the possibility of the transverse mesocolon contracting on the bowel to produce obstruction. 7. The anastomosis is made to the most dependent part of the stomach. 8. The reflex of bile, pancreatic and duodenal secretion into the stomach neutralizes the acid and is probably the most important factor in bringing about healing of the ulcer. 9. Excision of the ulcer or a large portion of the stomach may be performed at the same time.

Zinninger and Cash(6) have reported a case and reviewed the 82 other cases of congenital cystic dilatation of the common bile duct reported in the literature. It occurred much more frequently in females than in males and principally in children and young adults. The three most prominent symptoms found were pain, jaundice, and the presence of a tumor in the right upper quadrant of the abdomen. These changes were often intermittent over a long period of time. The etiology is unknown but it is generally agreed that the condition is congenital. Usually there was a hindrance to the outflow of bile, whether from a kink, valve, fold, partial occlusion or complete atresia. Therefore, the treatment is first to establish as early as possible an adequate communication between the biliary tract and the intestine. A partial excision of the cyst to reduce stasis is important to avoid infection, but unfortunately, due to technical reasons, this is often impossible. An adequate stoma must be made. Primary anastomosis seems to be the best procedure unless in the late stages of complete obstructive jaundice the condition of the patient may preclude it. Frequently the cause of death was hemorrhage.

UROLOGY

Obstruction at or near the utero-pelvic juncture is not infrequently caused by vessels which run from the great vessels to the lower pole of the kidney, pressing upon the ureter. Many advise the removal of the obstruction to the ureter by division and ligation of the blood vessel. More recently, however, it has been pointed out that such destruction of vascular supply of the lower pole of the kidney often leads to definite impairment of the organ and sometimes to pronounced atrophy or even necrosis. To avoid this complication Young(7) has devised a new plastic operation in which he resected the very redundent pelvic sac both anteriorly and posteriorly and resutured in such a way as to draw the ureter away from the vessels so as to completely remove all possibility of obstruction. He has done this in two cases giving amazing restoration of kidney function to practically normal and at the same time reducing the size of the pelvis.

Ainsworth-Davis(8) gave his impressions of ureterocele based on the study of four cases. He stated that a ureterocele is a cystic swelling of the intramural part of a ureter due to prolapse of one or more of its coats, projecting into the bladder, and invariably associated with a pin-hole ureteric orifice. This abnormal contracture of the orifice may be congenital or acquired. The varieties are mucous and muscular, the former variety having the cyst wall composed of a double layer of mucous membrane only, the outer being vesical and the inner ureteral in origin, and both transitional in type. In the muscular type there is muscle between the two layers of mucous membrane.

He divided the symptoms into two kinds, i. e., upper and lower urinary tract symptoms. The upper-tract symptoms are renal pain, ureteric pain and hematuria. Renal pain is usually of a dull, aching character, located in one or other loin, and occasionally acute attacks of renal colic if infection or with stone formation. Ureteric pain is quite variable. Hematuria occurred in three cases and was the only symptom in one. The lower-tract symptoms are vesical irritation and urethral obstruction.

This lesion may be unilateral or bilateral. It should be treated by surgical interference to prevent renal destruction by back pressure or by the occurrence of infection. It should be dealt with by per-urethral methods, except in the presence of complications which require operation. He considered diathermy applied by a cystoscopic electrode to be the method of choice. An attempt should be made to perforate the cyst wall at the time of treatment. If the papilla becomes involved by accident and the cyst be unperforated, inflammatory occlusion is almost a certainty, and a small area of the wall should be excised by cystoscopic scissors, or perforated by a cystoscopic knife.

Mark and Johnson(9) have reported interesting experimental work on the immediate effect of various pyelographic media upon the mucosa. They found constant injury to the bladder mucosa from the use of 25 per cent sodium bromide, even when no undue pressure or over-distention was present, and that it had marked hemolytic action. They considered it unsuitable and dangerous as a urographic medium. Sodium iodide in 12.5 per cent solution caused much less hemolysis but quite a recognizable edema of the mucosa and irritation. Iopax in 30 per cent solution caused about the same degree of hemolysis as 12.5 per cent sodium iodide, but it produced no mucosal or submucosal change or any evidence or irritation. Skiodan in 20 per cent (or normal) solution caused no hemolysis and was totally free of any irritating qualities. Using either iopax or skiodan there is no fear of bilateral pyelograms. They decided that, while there can be no question but that over-distention is productive of damage and pain even in the use of mild solutions. the real factor in causing irritation and mucosal damage lies in the character of the drug itself.

BONES AND JOINTS

Experimentally, Dragstedt and Kearns(10) found that the rate of healing of a defect in a dog's femur was reasonably consistent if the animals were healthy and with good appetites. Dogs that were sickly from distemper, diarrhoea or other causes showed a definite though not great impairment of the rate of bone repair. Thyroparathyroidectomy in the dog definitely delayed the healing of the bone defect. Healing goes on to completion and approximates the normal if calcium is given to maintain the blood calcium at a fairly normal level. The presence of the parathyroid hormone itself did not seem to be necessary for the process of calcification and ossification. It did not seem probable that the administration of parathormone will facilitate bone repair in any case except one of parathyroid deficiency. Thyroid deficiency uncomplicated by parathyroid deficiency did not delay the healing of a bone defect.

MISCELLANEOUS

Mayer(11) has made a very interesting study of the vasodilatation produced by anaesthesia by the method of taking the skin temperature. All the general anaesthesias studied caused an increase of skin temperature of one to five degrees. This applied also to spinal anaesthesia and occasionally, but not always, to local infiltration. An increase of skin temperature indicated a good prognosis, while a lowering of temperature was serious.

Wohlleben(12) injected a drug into the peripheral arteries followed by a roentgenogram to demonstrate their size, position, and collateral circulation. The drug he used is called Abrodil and he said that it could be injected at 30-40 per cent concentration without danger.

A very complete study of postoperative thrombosis, thrombophlebitis and embolism has been made by Bancroft and Stanley-Brown(13). Since the inauguration of the study 4,250 patients had been operated with the development of phlebitis in 11 cases and with no deaths from embolism. They concluded that loose abdominal dressings, early postoperative feeding and fluid administration relieved postoperative distention and distress and possibly diminished thrombosis. They carried out very extensive blood studies to determine the clotting index, etc., showing that certain individuals are more prone to develop thrombosis than others. The blood abnormalities were frequently improved by diet and intravenous medication. The diet should be low in fats and proteins. The intravenous administration of sodium thio-sulphate seemed to be a definite aid. Of course, operative and postoperative trauma should be eliminated as much as possible.

It has been demonstrated by Barsky and Silberman(14) that the ducts of the parotid gland can be safely injected with lipiodol so that they are well seen on the roentgenogram. The injection is done by using a blunt, flexible thin silver cannula. These injections, they stated, should never be made in the presence of active infection. At present, this method is the only accurate way of determining the exact condition of the gland and its deviations from normal when diseased. In cases of parotid fistula, actual visualization of the ducts is of the greatest aid in determining the course of treatment.

A very interesting case in which lipiodol was injected by an otolaryngologist into the maxillary sinuses followed by roentgenogram, which demonstrated lipiodol in the efferent lymphatic channels was reported by Pfahler(15). He considered it to be the first demonstration of the physiological distribution of the lymph spaces draining the maxillary sinuses. The deposits of lipiodol. from 2 to 5 mm. in diameter, were found in the lymph spaces extending from the zygoma to the clavicle on each side, but scattered also across the submental and sublingual region. On each side they can be traced to the outlet of the subclavian duct. It was surprising to find the lipiodol absorption extending upward as high as the zygoma. He thought that this might explain the tenderness and swelling seen in the zygomatic and temporal regions in severe maxillary sinus infection.

It was shown that lipiodol does not accumulate in the lymphatic glands, but remains rather in the lymphatic channels. Lipiodol is absorbed very slowly as it still remained after one year and probably another year will be required for its complete absorption. The wide and minute distribution of the lymphatic spaces would seem to explain the difficulties of dissecting the lymphatics at operations for malignancy when metastases have taken place by permeation. It also explains the extensive infiltration and recurrence often seen after dissections for malignant disease. Sabin speaks of tissue spaces containing a "tissue fluid" which should be distinguished from lymph. If these areas are only tissue spaces, Pfahler thinks they at least drain definitely into the thoracic duct. This method may be of advantage in the anatomic study of lymphatics.

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IDIOPATHIC APLASTIC ANEMIA: REPORT OF CASE

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(From The Lynch Clinic, Fairbury, Nebraska.)

CASE REPORT: Wm. A., an American farmer, aged 50 years, entered the Fairbury Hospital, October 19, 1931, complaining of weakness. He had enjoyed good health until one year ago, when he began to complain of drowsiness after eating, pyrosis, insomnia, and some shortness of breath on exertion. He occasionally vomited after meals. The patient dated the onset of his present illness from an attack of "flu", contracted in August, 1931. He became markedly constipated and took large doses of castor oil and magnesium sulphate, at frequent intervals. He had been able to eat only very easily digestible foods because of nausea and abdominal distress which he attributed to gas. Neither the vomitus or stools contained blood. Following the "flu" he became progressively weaker and was confined to bed most of the time. He had lost thirty pounds in the past three months. Two weeks before admission to the hospital he consulted a dentist who extracted two "abscessed teeth". He had no remarkable hemorrhage following the extractions but the sockets continued to fill up with blood clots. About five days after the extractions he began to have slight bleeding along the gum margin which did not respond to dental treatment, so he was referred to us.

He had measles and mumps in childhood; and influenza in 1929. He was born and raised in the vicinity in which he lived. He had no chronic gastrointestinal symptoms. The patient gave no history of any previous hemorrhagic tendency, and had no pulmonary, cardiac, renal, or urinary symptoms. The family history was negative.

Examination on admission showed his temperature to be 98.8° F., pulse 96, respirations 18, and blood pressure 114/70. He was an obese man weighing 207 pounds. His skin and mucous membranes were pale. Herpes was present on both lips. He showed a generalized purpuric eruption, it being more marked over the thorax and abdomen. There was a slight epistaxis from the left naris. Tongue was coated and showed two ecchymotic areas about 1 cm. in diameter. There was slight bleeding along the gum margin and there were blood clots in the sockets of the recently extracted teeth. Throat showed no purpuric spots. Neither lymph nodes or spleen was palpable, and the physical examination was otherwise normal.

The urine showed nothing abnormal. The blood showed: 70 per cent hemoglobin (T), 3,300,000 erythrocytes, and 3,350 leucocytes. The differential count was 26 per cent polymorphonuclears, 70 per cent lymphocytes, 3 per cent mononuclears, and 1 per cent transitionals. The erythrocytes appeared normal and no blasts were seen. All of the polymorphonuclear leucocytes were old cells. The reticulocyte count was less than 1 per cent and the blood platelets were markedly reduced in number. Blood Wassermann was negative. Coagulation time 4.5 minutes. Bleeding time 5 minutes. There was no retraction of the blood clot in six days. The tourniquet test was negative. Blood type IV (Moss). Stools showed neither ova or occult blood. The combined fluoroscopic and serial plate examination of the intestinal tract was normal.

A diagnosis of idiopathic aplastic anemia was made.

The patient refused blood transfusions, on advise from a physician who is a relative of the family. In brief he had nothing but symptomatic treatment. While in the hospital his temperature varied from 98° to 100.6° F. He became progressively weaker and by the end of the first week became dyspneic on slight exertion. His blood picture also became progressively worse. On October 28, the blood showed: 45 per cent hemoglobin (D), 1,730,000 erythrocytes, and 2,850 leucocytes. The differential count was 13 per cent polymorphonuclears, 76 per cent lymphocytes, and 11 per cent mononuclears. His purpuric eruption became somewhat more marked, and on November 1, epistaxis returned, bleeding along the gum margins became much more profuse, he developed hemoptysis and passed blood in his stools. The epistaxis and bleeding along the gum margins stopped in three days but his general condition became rapidly worse and the hemoptysis continued until his death on November 5, 1931. Autopsy was not obtained.

DISCUSSION

According to Stevens, aplastic anemia, in a few instances, has seemed to be a result of focal sepsis. In our case the patient's "abscessed teeth", which were extracted, presented the only possible etiological factor; but we believe it was merely a coincident finding. As with most cases of idiopathic aplastic anemia reported in the literature the diagnosis in this case was not confirmed by autopsy. We are aware that in some cases the clinical diagnosis of aplastic anemia has been proved wrong at autopsy, and that there are some in which only the autopsy can furnish an exact diagnosis; however, this case presented the characteristic findings of aplastic anemia, i.e., a progressive reduction of hemoglobin and erythrocytes with absence of evidence of regeneration on the part of the bone marrow; a marked leucopenia with a progressive absence of the polymorphonuclear leucocytes and a relative lymphocytosis; and a progressive reduction in the platelet count with the associated phenomena of such a condition. In view of the characteristic signs and symptoms and the absence of any apparent cause, the diagnosis of idiopathic aplastic anemia seems justified although an autopsy was not obtained.

THE RABBIT OVULATION TEST FOR PREGNANCY

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A laboratory test for the diagnosis of pregnancy which is both dependable and practical has long been sought. There is an Egyptian writing 3,500 years old which reads, "A woman may determine if she is pregnant by taking some earth and barley in a vessel and adding to it a little of her urine day by day. Should the barley grow the woman is pregnant, but if the grain does not grow, then she will not bear a child." Other tests as the adrenalin, glucose, blood sedimentation and the Abderhalden sero-diagnosis, all seemed very promising. Time has shown that they have little or no practical value.

The recent work on the ovarian hormone and the pituitary hormones form the basis and background for the present laboratory diagnosis of pregnancy. As the Egyptians of old, we again use the urine of the pregnant woman in making the test. It has been shown that this urine contains an excess of both the ovarian and pituitary hormones. Aschheim-Zondek injected urine from suspected pregnant women into twenty-one day old white mice. One hundred hours after this injection the mice were killed. If they found corpora haemorrhagica and corpora lutea in the ovaries of these mice a positive diagnosis of pregnancy was made. If these were absent the diagnosis was negative. In some four thousand cases, checked clinically, in ninety-eight per cent the diagnosis was correct. The test although very dependable is not practical. It requires a colony of six to ten thousand mice, it takes one hundred hours to complete it, and the ovarian changes are microscopic.

In 1929, Friedmen discovered that the substance found in the urine of pregnant women will produce ovulation in the rabbit. Normally the rabbit ovulates only after it copulates. This substance is absent in the urine of non-pregnant women. This test has now been extensively tried. It is dependable. A clinical check shows that it has an accuracy of ninety to ninety-five per cent. It is also practical. Suitable rabbits can readily be procured. It can be completed in sixteen to forty-eight hours. The ovarian changes are macroscopic.

We all have had occasion to use a laboratory test for pregnancy. Everyone has made errors in the diagnosis of early pregnancy. These mistakes are often embarassing to the practitioner. The patients feel that practitioners who are unable to diagnose this most common condition lack essential qualifications. The mistake in most cases of uncomplicated pregnancy is not very serious, for time will show what the correct diagnosis is. One is hardly justified to sacrifice rabbits in order to make a definite diagnosis of the presence or absence of pregnancy in cases like that.

There are conditions where it is highly desirable and even imperative that an accurate diagnosis be made in early pregnancy. Frequently, in legal cases, this test can give very important information as in blackmail, rape, illegitimacy, a post-humous child of a widow, abortions and illegal operations.

The test is of extreme importance in differential diagnosis of pelvic tumors, extra-uterine pregnancy, hydatidiform mole, chorio-epithelioma or metastasis of this. and in cases of amenorrhea due to pregnancy and those due to diabetes, menopause, glandular disorders and debilitating diseases. The test enables the obstetrician to advise his patient with tuberculosis, heart disease or nephritis, now possibly further complicated by pregnancy, the correct procedure for her, and that at a very early date. A test giving a laboratory diagnosis of pregnancy is indeed most welcome.

The actual technique of the test is very simple. Female rabbits three months or older are used. The patient is instructed to save about an ounce of the first urine she voids in the morning, in a clean bottle. This is sent to the laboratory. From five to eight cc. of this urine is injected into the marginal ear vein of a suitable rabbit. Sterile precautions are not necessary. After twenty-four hours another five to eight cc. of the urine specimen is again injected. Forty to forty-eight hours after the initial injection the ovaries of the rabbit are inspected. The rabbit may be either killed or anesthetized to do this. If the test is negative the ovaries are small and no apparent change can be found. If the test is positive, one finds definite corpora haemorrhagica and corpora lutea in each ovary. If the rabbit was anesthetized and the abdomen opened under sterile precautions it can now be closed and the rabbit used again. Several have limited the technique to the initial injection and inspected the ovaries sixteen to thirty hours later. Their results compare very favorably with those who employ two injections and wait forty to forty-eight hours.

In at least ninety-eight per cent of cases this test will be positive from ten to fifteen days after the last menstruation, throughout the entire pregnancy until twenty-four to thirty-six hours after delivery. It is also positive in hydatidiform mole and chorio-epitheloma or metastasis of this. The test will be found postive whenever "there is living placental tissue in biological contact with the maternal blood."

The test is easily invalidated by errors in its application and interpretation. One must be sure that the ovulation found is not due to any other cause than the injection of the urine. The test animal should, therefore, be kept in strict isolation preceding the injection. She should not merely be separated from male rabbits but also from female rabbits. It has been found that ovulation can be produced if one female climbs the other. In order to make sure that the animal to be used is suitable, some use only virgin rabbits. Others have even inspected the ovaries before injection.

There is also a possible error in the interpretation of ovarian changes. Rabbit ovaries sometimes contain unruptured haemorrhagic follicles. These differ from the ruptured follicles by being darker, smaller and more rounded. The ruptured follicles have a small central depression which can be seen by means of a hand lens. The presence of ruptured follicles should be the criterion in making a positive diagnosis of pregnancy. A few cases of pituitary disorder have also given a positive reaction in mice. Zondek reports a few positive reactions in cases of cancer. I have not been able to duplicate this finding using rabbits.

There is also a possibility of error in tabulating the statistics. In a few of these cases where the test was positive the clinical course of the patient apparently fails to confirm this. This discrepancy is usually due to the activity of a meddlesome midwife. Unless one is certain that an abortion has not occurred since the positive test these should not be listed as false positives.

A word of warning to those who perform these tests may be opportune. The test animal used is the female rabbit. These animals often harbour a most serious disease—Tularemia. It is, therefore, important that all workers should be warned of the seriousness of this disease and be instructed in the method of contagion. Adequate protection must be used whenever rabbits are handled.

SUMMARY

1. The rabbit ovulation test for pregnancy is dependable and practical.
2. It is subject to error unless care is taken in selecting the rabbit, interpretating the ovarian changes and tabulating the clinical check of positive tests.
3. Tularemia may be contracted unless care is taken in handling these rabbits.

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REPORT OF DELEGATES TO CONVENTION OF A. M. A., PHILADELPHIA, 1931

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(Delegate)
Omaha, Nebraska.

(It is unfortunate the reports of the delegates heretofore have been a year old when they were presented to the meeting, due to the fact the A. M. A. usually follows our State Medical convention. The report I am about to present is of last year's meeting at Philadelphia. Dr. Bailey, through heroic efforts, succeeded in getting a report of the New Orleans session just closed, and will present it at this session.)

The eighty-second Annual Session of The American Medical Association was held at Philadelphia, June 8th to 12th, 1931.

The Scientific Sessions, Commercial and Scientific Exhibits were all adequately housed under one roof at Convention hall. This arrangement was far more convenient and satisfactory than some of the previous meetings when the exhibits were located apart from the sectional meeting places, which at times have been scattered over the city many blocks apart.

The usual scientific program, divided into its many sections, was presented. Several Nebraska physicians participated in the program.

The Scientific and Commercial Exhibits were the largest ever yet displayed at any annual meeting and beggar description.

The House of Delegates with headquarters at the Benjamin Franklin hotel convened at 10:00 a. m., Monday. Dr. Fred C. Warnshuis, who has been speaker for more than ten years, was in the chair.

Following organization and the usual report of the Credentials Committee, the addresses of the speaker, president and president-elect were presented.

The speaker's address outlined the policies to be followed during the session and appointed the various committees. Nebraska was given representation on the Committee on Section and Section Work. Two additional committees were added for this session—the Committee on Reapportionment of Delegates and a Committee on Executive Session.

The membership of the house is limited to one hundred seventy-five, including the delegates from the different sections, U. S. Public Health Service, U. S. Army and Navy, Alaska, Hawaii, Canal Zone, Philippine Islands and Porto Rico. The number of delegates to which any state is entitled is based upon the number of physicians within the state who are members of their local county and state medical societies. As this number is subject to change, a reapportionment is made every three years.

In his address President Wm. Gerry Morgan stated that in his opinion, "the quality of service rendered at the bedside of suffering humanity is everywhere throughout the land of a progressively higher quality and that little need be feared for the future of the practice of medicine in the United States, notwithstanding the fact that some lay writers have been responsible for creating in the mind of the public a superficial sentiment for some sort of state medicine."

He discussed the advisability of moving the headquarters of the American Medical Association to Washington, D. C., and concluded with the statement that he did not feel it advisable to move from the geographic center of the country, but that the permanent office of the Bureau of Legal Medicine should be in Washington, at least during the session of the national legislature.

He suggested that an honorarium of $5,000 be granted the president and $2,500 the president-elect during their respective terms of office. Neither of these suggestions was adopted by the House of Delegates.

President-elect E. Starr Judd in his address discussed the proposition of a new headquarters building and stated that in his opinion it would be good business to postpone any building operation until we had sufficient money to pay for it.

In a discussion on Medical Education and Hospitals he stated "that while much of the expense of the patient is his hospital bill, yet the patient is the patient of the physician and not of the hospital, and the physician should acquaint himself with and have more to say about some of the hospital problems."

He urged better support of the Bureau of Legal Medicine and a closer cooperation between the bureau and the Legislative Committees of the different states. He proposed the formation of a Bureau for the Study of Cancer, to investigate all research and claims, and to have charge of all publicity with regard to cancer. No action was taken on this latter proposal.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 26, 1932.

The report of the secretary, Olin West, announced that membership in the American Medical Association had passed one hundred thousand, yet there had been a slight decrease in fellowships. He called attention to the by-laws which require that all delegates shall have been fellows for two years immediately preceding the session at which they serve.

The report of the Board of Trustees bespoke efficient and economical management of association officers. From a business involving more than $1,500,000, less than $6,000 was charged off as "bad debts."

The circulation of the *Journal* showed a decrease. 61% of Nebraska physicians are subscribers.

In 1924 the headquarters of the American Medical Association established a Package Library service with the special intent of enabling practitioners in small communities to secure recent material on special subjects in which they might be interested. This is at the disposal of every physician, and more than 2,000 packages were mailed during the previous year.

The Bureau of Medical Economics created by resolution at the last session at Detroit has been established, with Dr. R. G. Leland, formerly director of the Bureau of Health and Public Instruction as director of this new bureau.

In the regular routine business of the House of Delegates many resolutions, inviting much discussion, were introduced. There were four sessions held, one of which was an executive session. We shall present in this report some of the more important transactions.

1. A resolution was adopted requesting the Council on Medical Education and Hospitals to investigate the entire subject and make recommendations looking to the establishment of proper qualifications of physicians who shall engage in the practice of a specialty.

2. A resolution was introduced by Dr. H. H. Shoulders of Tennessee, providing for the creation of a Bureau of Disability Insurance in the Veterans Bureau as now constituted, and the issuance of a disability insurance policy to each veteran, that would provide a weekly cash benefit in addition to a liberal hospital benefit, during the period of disability and hospitalization. This was passed and referred to a special committee on legislative activities.

3. A resolution condemning the examination of preschool children en masse, and insisting that the medical examination of each child be thorough and individual and under the supervision of the family physician, was adopted.

The committee on Reapportionment of Delegates reported that on the basis of one delega for each 800 members, the total membership the House would be 173. On this basis Californ would gain one delegate, New York would gai two delegates, while Kansas, Maine and Pennsy vania would each lose one delegate. This repor was adopted.

The officers elected for the following yea were:

E. H. Carey, Dallas, Texas, president.

Geo. C. Yeager, Philadelphia, vice president.

Olin West, Chicago, secretary.

New Orleans was chosen as the place of meeting for 1932.

The attendance at this meeting was abou 7,000. Twenty-five Nebraska physicians registered the first three days of the meeting.

WILL THE PHYSICIAN PRESCRIBE THI DIET?

John Albert Marshall, San Francisco (*Journa A. M. A.*, Oct. 10, 1931), believes that the diets that cause various degrees of hypoplasia of the teeth are those in which any one of several factors may be altered. Of these, among the most important seem to be the vitamins and the relation of the vitamins to various mineral constituents in the diet, notably calcium and phosphorus. It would seem that a useful method of applying the present knowledge of dietary research would be for the dentist to secure more cordial cooperation with the patient and the physician. Unfortunately, however, there are too many instances wherein this cooperation either is not sought by the dentist or is refused by either the patient or the physician. The latter situation deserves a free and open discussion in the hope that a solution of the problem may be reached. Until this point is attained, the dentist is thrown, so to speak, on his own resources and perforce must designate, at least in a general way, those changes in the diet which a study of the case seems to indicate. Recommendations on choice of food are frequently necessary and may be made by the dentist without assuming any responsibility. Any further instructions should be left to the medically trained man. Dietary prescription is a different matter. It is based on a careful study by the physician of many data, gathered both by laboratory and by clinical methods. The interpretation of these data and their application is the duty of the physician rather than of the dentist. But the clinical application of these facts becomes the joint duty of dentist and physician.

RUPTURE OF THE UTERUS THROUGH CESAREAN SCAR IN THE SECOND MONTH OF PREGNANCY*

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Mrs. R. H., age 36, primipara:

This patient, then seven months pregnant, was admitted to the Swedish Mission Hospital on August 19, 1919, with face and extremities markedly edematous, systolic pressure of 220 mm., a 4 plus albuminuria and the abrupt onset of blindness on that morning.

Cesarean section was done at once, the uterine incision sutured with two rows of chronic catgut. Sterilization was urged but not permitted by the husband. Subsequent to operation the patient had two severe convulsions but in 24 hours the blood pressure had dropped to 170 mm. with rapid clearing of the amaurosis.

A severe bronchitis marred her convalescence and probably accounted for the subsequent development of an incisional hernia.

Four months following the cesarean section, she missed a menstrual period. Epigastric distress, rising blood pressure and albuminuria indicated interruption of pregnancy, a course objected to by both parents and husband on a religious basis and furthered by their desire for a child. On February 20th, then presumably 6 or 7 weeks pregnant, there occurred cramping pains in the lower abdomen rather abrupt in onset and accompanied with moderate bleeding from the uterus. It was thought that an abortion might have taken place, and an expectant course was adopted. The pains were of brief duration and bleeding scanty and intermittent, but the general situation became more ominous with increasing epigastric distress, systolic pressure over 200 mm. and edema appearing in the extremities.

On March 3rd, therefore, the cervix was dilated without anesthesia and the uterine cavity explored very cautiously with placental forceps. Only a small amount of decidual and chorionic tissue was obtained and no large masses. Assuming that she had already aborted, the repair of the hernia was undertaken under a local anesthetic with the intention of resecting the tubes. With the exposure of the fundus, the intact fetal sac was seen partially extruded through a rent in the anterior surface of the uterus corresponding to the cesarean scar. The exposed surface of the sac was covered with a plastic gray exudate and no old blood was found in the cul-de-sac. The sac was quite adherent to the side walls of the rent and was ruptured during its removal. The rent was then sutured, the tubes excised at the uterine cornua and the incisional hernia repaired. The post-operative course was uneventful.

Comment: It is reasonable to suppose that rupture of the scar occurred at the time that she had abdominal cramps some 10 days before, accompanied by a moderate amount of uterine hemorrhage. On the other hand it might be thought that the dilatation and exploration of the uterus might have produced rupture and partial extrusion of the sac and its contents. Against this was the extreme caution of the procedure necessitated by the lack of anesthesia and the fact that the sac was covered with a plastic exudate and firmly adherent to the walls of the rent, showing that the condition had existed for some time. The embryo which corresponded in size approximately to that of a two months pregnancy, showed well advanced degeneration.

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*From the Surgical and Gynecological Department, College of Medicine, University of Nebraska.

RECTAL AND ANAL INJURIES FROM CERTAIN FOODS AND INGESTED FOREIGN BODIES

Descum C. McKenney, Buffalo (*Journal A. M. A.*, Nov. 28, 1931), states that injuries to the lower part of the rectum and to the anal canal from certain foods and from foreign bodies, especially small ones ingested with food, are of sufficiently frequent occurrence to merit consideration. One wonders how some of the articles found could possibly have escaped detection during mastication. Their presence is made known when such a body is hard, comes between the teeth, or impinges on the sensitive lining of the mouth. In this way many such articles are discovered and extruded before harm is done, yet many are swallowed unconsciously or, perhaps, consciously when too far down to be returned to the mouth. The author enumerates a large number of foods and ingested foreign bodies that occasionally cause rectal and anal injuries. The articles are small and, fortunately, most of them, being surrounded by feces, go through the intestinal tract and are evacuated without doing any harm. Some cause injury, which may or may not be followed by infection, and pass on. Still others become lodged during their passage, cause injury and ulceration, remain for a time, and then, in the purulent discharge which forms, are extruded, so that when the patient is examined only the damage done by the foreign body is found. Not all foreign bodies, however, after doing harm, are evacuated. Clinical proof locates the origin of about 85 to 90 per cent of the lesions due to infection in the lower part of the rectum and in the anal canal near the anorectal junction. These facts emphasize the importance of small foreign bodies in the study of the etiology of rectal and anal conditions characterized by infection.

DIAL TWISTING

The doctor's little daughter watched her father testing the heart and lungs of her young brother. At last she said: "Getting any new stations, Daddy?"

In Memoriam

"Captain or Colonel,"—whatever invocation
Suit our hymn the best, no matter for thy station,—
On thy grave the rain shall fall from the eyes of a mighty nation!
Long as the sun doth shine upon it
Shall glow the goodly pine upon it,
Long as the stars do gleam upon it
Shall memory come to dream upon it.

—Thomas William Parsons.

Donald Macrae, Jr.

Died January 11th, 1932

President
Iowa State Medical Association
1921
Honorary Member Nebraska State Medical Association

In Memoriam

I have no returning, onward is best,
Close to the dark, sweet earth in every place
But with the sky's mark hidden in my breast,
And a star's shadow falling on my face.
Where shining spaces wait to fill with me,
Death is the beautiful and bitter sea.
—Winifred Welles.

Mortimer L. Hildreth

Died December 4th, 1931

President
Nebraska State Medical Association
1892

In Memoriam

Yet they once lived and struggled years ago;
Their hearts beat madly as these hearts of ours—
And now is all undone in dreamless rest?
See, a great city stands against the glow—
Their city, they who here beneath the flowers
Have known so long God's gift of peace most blest!
—Thomas S. Jones, Jr.

Ryan McDonald, April 12th, 1931
George G. Gandy, June 11, 1931
H. C. Williams, June 29, 1931
James C. Tucker, July 3, 1931
E. T. McGuire, July 26, 1931
D. J. Regnish, August 2, 1931
L. A. Lansing, August 7, 1931
William M. Davis, Oct. 10, 1931
John W. Bozarth, Oct. 12, 1931
Harvey H. Bellwood, Oct. 29, 1931
David Stidworthy, Nov. 14, 1931
Chas. F. Zimmerman, Nov. 15, 1931
Arthur L. Lindquist, Dec. 6, 1931
Artemas I. MacKinnon, Dec. 22, 1931
Alfred C. Graham, Jan. 3, 1932
Edwin B. Hanna, Jan. 5, 1932
B. A. McDermott, Jan. 13, 1932
Oscar C. Hopper, Jan. 23, 1932
Solon R. Towne, Jan. 28, 1932
Truman E. Fairall, Jan. 30, 1932
John J. Metzinger, Feb. 4, 1932
G. L. Roe, Feb. 8, 1932
Andrew Crawford, Feb. 14, 1932
Orville M. Moore, Feb. 18, 1932
John J. Cameron, Feb. 20, 1932
L. L. Nelson, Feb. 29, 1932
Walter O. Henry, March 21, 1932
James M. O'Connell, April 14, 1932
Andrew Jackson Faulk, April 16, 1932
William F. Dugan, April 19, 1932

MINUTES OF THE 1932 ANNUAL MEETING

HOUSE OF DELEGATES

FIRST SESSION

Lincoln Hotel, May 24, 1932

The House of Delegates was called to order by the president, Dr. Lucien Stark.

Motion was made that inasmuch as the minutes of the 1931 meeting had been published in the Journal that the reading of them be dispensed with and that they be approved and adopted as published in The Nebraska State Medical Journal. Seconded and carried.

Roll call by Secretary Adams showed forty-eight members present. Then followed the regular order of business.

Motion was made that Dr. C. A. Selby of North Platte be elected as president pro tem. Seconded and carried.

The report of the Council was called for. Motion was made that inasmuch as this report of the Council had been published that the reading of the report be dispensed with and that it be adopted as published in the Journal. Seconded and carried.

The report of the Secretary-Treasurer was called for. Secretary Adams stated that inasmuch as both the Program Committees and the Secretary's report had been published, he saw no necessity of reading them again. Motion made that the report of the Program Committee and Secretary be accepted as printed in the Journal. Seconded and carried.

The report of the Delegate to the American Medical Association was called for. Dr. Fouts stated that inasmuch as this report will be read before the General Session he saw no necessity of reading this report at this time. Motion was made that this report be accepted and read before the General Session. Seconded and carried.

Report of the Committee on Public Policy and Legislation was called for. Motion was made that this report be postponed until some later session. Seconded and carried.

The report of the Committee on Journal and Publication was called for. Dr. Long stated that he had no further addition to make to the report which was given in January and asked that this report be accepted. Motion made that report of the Journal Committee be accepted as given before the Council in January. Seconded and carried.

The report of the Insurance Committee was called for, which was read by Dr. C. A. Selby. Motion was made that this report be accepted and placed on file and that this committee be continued. Seconded and carried.

The report of the Campaign Committee was called for. Dr. Hohlen stated that he had no further additions to make to the report submitted to the Council in January. Motion made that this report as given in January be received and approved. Seconded and carried.

The report of the Council on Medical Education was called for, which was read by Dr. Welch. Motion made that this report be received and referred to the Council for further action. Seconded and carried.

The report of the Medical Legal Defense Committee was called for. Dr. Fouts stated that he had no further addditions to make on this report. Motion made that this report be received and accepted. Seconded and carried.

The report of the Public Activities Committee was called for. Dr. Hays stated that he had no further additions to make to this report. Motion made that this report be received and accepted. Seconded and carried.

Report of the Medical Students Loan Fund Committee was called for. Dr. Long stated that he had no further additions to make to this report. Motion made that this report be received and accepted. Seconded and carried.

Dr. Overgaard read the Necrology Report. The members remained standing during the reading. Motion was made that a page be set aside in the Journal in Memoriam to Past President, Dr. Mortimer L. Hildreth and one page for Dr. Donald MaCrae, Jr., Past President of the Iowa State Medical Association and also member of the Nebraska State Medical Association. Also that a page be set aside in Memoriam to other members who have passed away in the last year. Seconded and carried.

A request was made by Dr. Arrasmith, delegate from Hall County, that Dr. Geo. A. Roeder of California be made an Honorary member of the State Association. Motion was made that this be referred to the Council. Seconded and carried.

Nominations for the members of the nominating committee were called for, each Councilor to name a member from each Councilor District. Members adjourned for five minutes. Meeting was called to order and the following nominations were made:

1st District—Dr. Ernest Kelly.
2nd District—Dr. Geo. Covey.
3rd District—Dr. G. W. Egermeyer.
4th District—Dr. Paul Siman.
5th District—Dr. W. E. Wright.
6th District—Dr. Chas. Way.
7th District—Dr. Rudolph Decker.
8th District—Dr. W. J. Douglas.
9th District—Dr. G. H. Bentz.
10th District—Dr. Geo. Pinney.
11th District—Dr. T. J. Kerr.
12th District—Dr. G. W. Pugsley.

Dr. Fouts made a motion that a correction be made in the Constitution as follows:

"Motion to amend Section I of page 23 of the by-laws of the Nebraska State Medical Association, the second sentence of Section I to be changed to read, 'This Committee shall be known as the Medical Legal Defense Committee and shall consist of the Secretary of the State Association who shall act as Secretary of the Committee and two other members who shall be elected by the Council according to Page 19, Section I of the by-laws governing our association and to serve for the term of two years.' The remaining portion of the Section to remain as at present."

Motion was made that the meeting adjourn. Seconded and carried.

COUNCILOR MEETING

FIRST SESSION

Lincoln Hotel, May 24, 1932—7:00 P. M.

The meeting was called to order by President of the Council Lehnhoff. Those present were Drs. Overgaard, Lehnhoff, Boyer, Cook, Bryson, Rork, Selby, Cooper, Davis, King, Potter, ex-president Lucien Stark. Dr. R. B. Adams, secretary-treasurer, and Dr. E. R. Hays, chairman of the Public Activities Committee were also present.

A communication was read by secretary Overgaard from Dr. Potts of Omaha to the Council. After considerable discussion a committee was appointed by the president to bring in a resolution on the attending of Clinics conducted by various organizations. The committee appointed consisted of Drs. Rork and Selby.

A communication was read by secretary Overgaard from the American Association for the Control of Cancer asking to make a survey in Nebraska which is endorsed by the State Association. Motion made that this matter be referred to the Public Activities Committee for further action. Seconded and carried.

Motion made that Dr. Geo. A. Roeder, on application of the Hall County Medical Society, be recommended to the House of Delegates for Honorary membership in the State Association. Seconded and carried.

Report of the Committee on Medical Education was discussed. Dr. Selby made the following motion:

"This Council thanks the Committee for their most efficient and whole-hearted service and they ask that they continue this service and desire to express their appreciation for the work they have already done in the performance of their duties.

"At this time we feel that we cannot approve of this particular action nor recommend it to the House of Delegates for approval.

"We, therefore, recommend that the action be postponed."

Seconded and carried.

This was further discussed by Drs. Rork and Boyer.

Dr. Hays discussed the work he has been doing and the work to be done. This was further discussed by Drs. Bryson, Cooper, Stark, Selby and Lehnhoff, following which Dr. Selby made the following motion:

"This Council recommends the continuance of the Public Activities Committee and that at each annual meeting an approved paper shall be presented to the General Sessions of this Society on Medical Economics, if necessary, at an executive session of the General Session." Seconded and carried.

Motion made that the Council adjourn. Seconded and carried.

HOUSE OF DELEGATES

SECOND SESSION

Lincoln Hotel, May 25, 1932—8:00 A. M.

The meeting was called to order by Dr. A. E. Cook president. Roll call by Secretary Adams showed 43 members present.

The minutes of the first session were read by Secretary Adams. It was suggested that the following addition be made to Dr. Hays' report: Dr. Hays advises us that the State Fair Association has appropriated $600.00 for use during Health Week at the State Fair this fall. Motion made that the minutes be adopted as corrected. Seconded and carried.

Dr. Overgaard read the minutes of the first Councilor meeting. Motion was made that the minutes be adopted. Seconded and carried.

Dr. Rork read a communication from Dr. Jahr in regard to physiotherapy courses and a resolution presented by a committee appointed by the president of the Council in regard to this communication. This resolution was referred back to the Council for further action and to be taken up before the House of Delegates at a later session.

Dr. Bailey made an oral additional report on the Legislative Committee. The work of the Legislative Committee was further discussed by Drs. Davis, Neilsen, Hohlen, Arrasmith, Buis, Stark, Buckley, Covey, Overgaard and Fouts.

Motion made that the House of Delegates adjourn. Seconded and carried.

COUNCILOR MEETING

SECOND SESSION

Lincoln Hotel, May 25, 1932—9:00 A. M.

The meeting was called to order by President Selby. Those present were: Drs. Overgaard, Boyer, Bryson, Rork, Selby, Cooper, King, Potter and Stark. Secretary Adams was also present.

The resolution was presented by the committee appointed by the president of the Council consisting of Drs. Rork and Selby relative to a letter received from Dr. Jahr on physiotherapy courses to read as follows: "It is the opinion of the Council that such physiotherapy courses as are conducted solely for the sale of any type of apparatus should be so designated and no tuition charge be made therefor.

Any member of the Nebraska State Medical Association paying money for any so-called instruction should previously carefully investigate the ability of the instructors and communicate with the Secretary of the State Association, before entering into such contract, who should determine whether or not such course is conducted for the advancement of medical knowledge rather than solely for the sale of apparatus." A motion was made that this resolution be recommended to the House of Delegates. Seconded and carried.

The following budget was recommended by the Council for the year 1933:

Journal Fund, per member	$ 1.50
Defense Fund, per member	2.00
Salary Chairman Defense Committee	600.00
Salary of Secretary	600.00
Councilor Expense	360.00
Office Expense of Secretary	800.00
Reporter for Meeting	150.00
Campaign Committee	500.00
Public Activities Committee	1,500.00
President's Expense	100.00
Salary, Chairman of Public Activities Committee	1,000.00
Legislative Committee	100.00
Program Talent	500.00
Delegates to A. M. A. and Council of Medical Education—as submitted	
Medical Student Loan Fund	500.00

Motion made that the budget as read be recommended to the House of Delegates for the year 1933 and that in case of any emergency deficiency that the officers be empowered to call upon the reserve in which ever specific fund the deficiency occurs. Seconded and carried.

Dr. Overgaard made the following motion: "That if an emergency arises that the Secretary be instructed to pay the Medical Student Loan Fund appropriation in September of 1932 instead of January, 1933, for the 1933 budget." Seconded and carried.

Motion made that Dr. R. W. Fouts of Omaha be unanimously re-elected as a member of the Medical Legal Defense Committee for a period of two years. Seconded and carried.

Motion was made that the Councilor meeting for 1933 be held in Lincoln and that the time be 2:00 o'clock to continue through the evening until all business has been transacted. Seconded and carried.

Motion made that the Council adjourn. Seconded and carried.

HOUSE OF DELEGATES

THIRD SESSION

Lincoln Hotel, May 26, 1932—8:00 A. M.

Meeting was called to order by President pro tem Dr. C. A. Selby. Roll call by Secretary Adams showed fifty-five members present.

The minutes of the second session of the House of Delegates were read by Dr. Adams. Motion was made that the minutes be approved as read. Seconded and carried.

The report of the nominating committe was called for. This report was read by Dr. Geo. Covey as follows:

For President-elect: Dr. Joseph Bixby, Geneva; Dr. Adolph Sachs, Omaha.

For Vice Presidents: Dr. P. A. Sundbury, Holdrege; Dr. Homer Davis, Genoa.

For Councilors: 9th District, Dr. R. D. Bryson, Callaway; 10th District, Dr. L. W. Rork, Hastings; 11th District, Dr. C. A. Selby, North Platte; 12th District, Dr. A. L. Cooper, Scottsbluff.

For Delegate to the A. M. A.: Dr. Roy Fouts, Omaha.

For Alternate Delegate to the A. M. A.: Dr. J. J. Hompes, Lincoln.

For Delegate to Council of Medical Education of A. M. A.: Dr. J. S. Welch, Lincoln.

For Member of the Journal and Publication Committee: Dr. B. F. Bailey, Lincoln.

For Member of Public Activities Committee: Dr. John T. Myers, Omaha.

For Member of Medical Students Loan Fund Committee: Dr. H. J. Lehnhoff, Lincoln.

Respectfully submitted,
GEO. W. COVEY, Chairman.

A motion was made that the report of the nominating committee be accepted. Seconded and carried.

The House then proceeded to the election of officers.

Drs. Wm. Wright and Fred Langdon were appointed as tellers.

Additional nominations for president-elect were in order. As no additional names were submitted by the House nominations for President-elect were closed. The House of Delegates then proceeded to cast ballot for the two nominees for President-elect.

Dr. Adolph Sachs, Omaha, received 30 votes and Dr. Joseph Bixby, Genoa, received 22 votes.

A motion was made that inasmuch as Dr. Sachs had received the majority of votes cast for president-elect that his election be made unanimous. Seconded and carried.

Dr. Selby appointed Drs. A. P. Overgaard and Roy Fouts as a committee to bring Dr. Adolph Sachs, president-elect before the House of Delegates.

Nominations for vice-presidents was then in order. Dr. Long stated that inasmuch as Dr. Sundbury had not been present at any of the sessions that he could not, according to the Constitution of the Nebraska State Medical Association, be elected to office as vice-president of the Association.

A motion was made that Dr. E. B. Hamel of Hastings be nominated as vice-president. Seconded and carried.

A motion was made that nominations for vice-president be closed. Seconded and carried .

A motion was made that the secretary cast the unanimous ballot of the House of Delegates for Drs. E. B. Hamel and Homer Davis for vice-presidents. Seconded and carried.

A motion was made that the secretary cast the unanimous ballot of the House of Delegates for Dr. R. D. Bryson, Councilor for the 9th District; Dr. L. W. Rork, Councilor for the 10th District; Dr. C. A. Selby, Councilor for the 11th District; Dr. A. L. Cooper, Cuncilor for the 12th District. Seconded and carried.

A motion was made that the Secretary cast the unanimous ballot of the House of Delegates for Dr. R. W. Fouts as Delegate to the A. M. A. Seconded and carried.

A motion was made that the Secretary cast the unanimous ballot of the House of Delegates for Dr. J. J. Hompes of Lincoln as Alternate Delegate to the A. M. A. Seconded and carried.

A motion was made that the Secretary cast the unanimous ballot of the House of Delegates for Dr. B. F. Bailey of Lincoln for a member of the Journal and Publication Committee. Seconded and carried.

A motion was made that the Secretary cast the unanimous ballot of the House of Delegates for Dr. J. T. Myers of Omaha as a member of the Public Activities Committee to succeed Dr. C. C. Tomlinson of Omaha. Seconded and carried.

A motion was made that the Secretary cast the unanimous ballot of the House of Delegates for Dr. H. J. Lehnhoff of Lincoln for a member of the Medical Students Loan Fund Committee. Seconded and carried.

A motion was made that the Secretary cast the unanimous ballot of the House of Delegates for Dr. J. S. Welch of Lincoln as Delegate to the Council on Medical Education of the A. M. A. Seconded and carried.

The minutes of the second Councilor meeting were read by Dr. Overgaard.

A motion was made that these minutes be received and adopted. Seconded and carried.

Dr. Adolph Sachs being at this time present in the room was presented to the House of Delegates by Dr. C. A. Selby, president protem after which Dr. Sachs gave a short talk in appreciation of the honor given him.

The selection for the place of the next meeting was then in order. Communications from the Omaha-Douglas County Society and the Omaha Chamber of Commerce were presented by Dr. Adams inviting the Nebraska State Medical Association to meet in Omaha next year.

Motion was made that a unanimous vote be cast for Omaha as the place of meeting for 1933. Seconded and carried.

A motion was made that the House of Delegates extend to the Lancaster County Medical Society a vote of sincere thanks for their splendid entertainment and also a vote of thanks to the Lincoln Hotel for their courteous treatment of the Nebraska State Medical Association. Unanimously carried.

A motion was made to adjourn. Seconded and carried.

ROLL CALL—HOUSE OF DELEGATES

Adams—G. L. Pinney	p	a	p
L. F. Egen	a	a	a
Boone—F. M. Barns	a	a	a
J. W. B. Smith	a	a	a
Box Butte	a	a	a
	a	a	a
Buffalo—G. H. Bentz	p	p	p
	a	a	a
Burt—W. C. Kettel	p	p	a
I. Lukens	a	a	a
Butler—C. E. Beede	a	a	a
J. H. Downing	a	a	a
Cass—L. D. Lee	a	p	p
D. R. Hanson	a	a	a
Cedar-Dixon-Dakota-Thurston-Wayne—			
John Buis	p	p	p
J. D. Lutton	a	a	a
Chase-Dundy-Hayes-Hitchcock—			
Geo. Hoffmeister	a	a	a
L. B. Brown	a	a	a
Cheyenne-Kimball—A. L. Miller	a	p	a
J. R. Taylor	a	a	a
Clay—C. F. Nutzman	a	a	a
H. V. Nuss	a	a	a
Colfax	a	a	a
	a	a	a
Custer—F. A. Burnam	a	p	p
C. L. Mullens	a	a	a
Dawson—A. W. Anderson	a	p	p
	a	a	a
Dodge—A. E. Buchanan	p	a	a
	a	a	a
Fillmore—V. V. Smrha	p	a	p
	a	a	a
Franklin—H. C. Smith	p	a	p
D. Neville	a	a	a
Furnas—Walter Miller	p	a	p
	a	a	a
Gage—F. W. Buckley	p	p	a
J. C. Waddell	a	a	p
Hall—W. J. Arrasmith	p	p	p
R. C. Woodruff	a	a	a
Hamilton	a	a	a
	a	a	a
Harlan—R. H. Kerr	a	a	a
W. C. Bartlett	a	a	a
Holt and Northwest—J. W. Gill	a	a	p

	a	a	a
Howard—M. O. Arnold	a	a	a
E. C. Hanisch	a	a	a
Jefferson—Geo. R. DuVall	a	a	a
D. O. Hughes	a	a	a
Johnson—C. D. Barnes	a	a	a
J. M. Curtis	a	a	a
Lancaster—J. E. M. Thomson	p	p	p
B. F. Williams	a	a	a
Geo. W. Covey	a	p	p
J. J. Hompes	a	a	a
Harry E. Flansburg	p	p	p
A. D. Munger	a	a	a
Lincoln—F. M. Bell	p	p	p
T. J. Kerr	a	a	a
Madison-Stanton-Pierce-Antelope-Knox-Cuming—E. L. Brush	a	a	a
Geo. Hansen	a	a	a
Antelope-Knox-Cuming—Geo. Hansen	a	a	a
R. A. Frary	a	a	a
H. S. Tennant	a	a	a
John H. Calvert	p	p	p
A. E. Mailliard	a	a	a
E. E. Curtis	a	a	a
E. E. McClelland, Jr.	a	a	a
A. J. Schwedhelm	a	p	p
R. E. Johnson	a	a	a
H. W. Francis	a	p	p
P. B. Lonergan	a	a	a
Merrick	a	a	a
Nance	a	a	a
Nemaha	a	a	a
Northwest-Nebraska	a	a	a
Omaha-Douglas—R. W. Fouts	p	p	p
J. J. Freyman	a	a	a
Ernest Kelley	p	a	p
Herman Johnson	a	a	a
E. A. Connolley	p	a	p
E. A. McMahon	a	a	a
J. F. Langdon	p	a	p
Rudolph Rix	a	a	a
Chas. Moon	p	p	p
Frank P. Murphy	a	a	a
E. L. MacQuiddy	p	p	p
H. H. Davis	a	a	a
	a	a	a
	a	a	a
Otoe—R. H. Loder	p	p	p
J. P. Gilligan	a	a	a
Pawnee—Ralph S. Metheny	p	a	p
E. L. McCrea	a	a	a
Phelps—P. A. Sundberry	a	a	a
Rachel Long	a	a	a
Platte—E. E. Koebbe	a	a	p
F. H. Morrow	a	a	a
Polk	a	a	a
Red Willow—W. D. Mackechnie	p	p	a
G. A. DeMay	a	a	a
Richardson—G. W. Egermayer	p	p	p
Wm. Shepherd	a	a	a
Saline—Robert C. Kirchman	p	a	p
A. A. Conrad	a	a	a
Saunders—C. W. Way	p	p	p
	a	a	a
Scottsbluff—G. W. Pugsley	p	a	p
	a	a	a
Seward—H. D. Clark	a	a	a
C. W. Doty	a	a	a
Thayer—Rudolph F. Decker	p	p	p
H. W. Saylor	a	a	a
Valley	a	a	a
	a	a	a
Washington—Wm. Wright	p	p	p
R. J. Murdock	a	a	a
Webster—E. A. Creighton	a	a	a
	a	a	a
York—R. E. Harry	a	a	a
J. S. Bell	a	a	a

COUNCILORS

A. P. Overgaard	p	p	p
H. J. Lehnhoff	p	a	p
W. R. Boyer	p	p	a
A. E. Cook	a	p	p
R. D. Bryson	p	p	p
L. W. Rork	p	p	p
C. A. Selby	p	p	p
A. L. Cooper	p	p	p
Homer Davis	p	p	p
D. D. King	p	p	p
H. E. Potter	p	p	p
W. J. Douglas	a	a	a

OFFICERS

President—1st meeting—Lucien Stark	p		
President-elect—1st meeting—A. E. Cook	p	p	p
President—A. E. Cook	p	p	p
Vice-President—A. L. Miller	a	p	p
A. J. Cameron	a	a	p
Secretary-Treasurer—R. B. Adams	p	p	p

EX-PRESIDENTS

J. E. Summers	a	a	a
W. O. Bridges	a	a	a
A. R. Mitchell	a	a	a
F. A. Long	p	p	p
L. M. Shaw	a	a	a
P. H. Salter	a	a	a
J. P. Lord	a	a	a
I. N. Pickett	a	a	a
E. W. Rowe	p	a	p
W. F. Milroy	a	a	a
C. L. Mullins	a	a	a
H. W. Orr	a	a	a
M. S. Moore	a	a	a
B. B. Davis	p	a	a
B. F. Bailey	p	p	p
Morris Nielsen	p	p	p
Palmer Findley	p	a	a
H. J. Lehnhoff	p	a	p
H. E. Potter	a	p	p
B. R. McGrath	p	a	p
F. S. Owen	a	a	a
K. S. J. Hohlen	p	p	p
Lucien Stark—after 1st meeting		p	p

"And so you are going to the hospital for an operation, are you, Mr. P.?"

Mr. P. (sighing deeply)—"Yes, they say I have to."

Visitor—"And what is the trouble for which you are to be operated on?"

Mr. P.—"Well, it may be appendicitis, or it may be a gall-stone, or it may be floating kidney, so the doctor says, but I think it is a case of professional uncertainty."

Visitor (in a tone of astonishment)—"Well, that is a new one on me. I have never heard of such a disease."

Mr. P.—"Then your acquaintance with doctors must be limited."

HUMAN SIDE OF THE HOSPITAL

Joseph Brennemann, Chicago (*Journal A. M. A.*, Nov. 14, 1931), states that after an extended experience with a dozen widely differing hospitals, as intern, attending physician, visitor and patient, his attitude toward a given hospital centers in the emotions, in the heart, rather than in the mind, and he believes that reaction is freely shared by others. It is not the idealness of equipment and of organization but the subtler spirit of enthusiastic and self-effacing cooperation, of steadfast, sympathetic loyalty and devotion to a common cause that is bigger than any individual that makes hospitals. It is the atmosphere, the morale of a hospital, that makes or wrecks its reputation and its usefulness. The children may be well cared for; the medical staff may be made up of able clinicians and investigators; the superintendent may be as wise as Solomon and as "just" as Aristides, and may see that the whole machinery of administration is well oiled and the physical equipment faultless; the board of trustees and the women's board may be actively interested and may do all that could be desired in other ways; the nurses may be intelligent, faithful and well trained; the interns and residents may be well schooled and prepared for their duties, may, indeed, get up at seven and be at breakfast on time; and yet the vital spark will be lacking if there is not back of it all an all-prevading spirit of cooperation and of kindliness or, as Emerson has so beautifully expressed it, "an element of love that permeates it like a fine ether."

LABOR IN ELDERLY PRIMIPARA

Margaret Schulze, San Francisco (*Journal A. M. A.*, Sept. 14, 1929), included in her study all women who had their first babies after reaching the thirtieth year. There were 337 women, or 4.5 per cent of 7,500 deliveries. They formed 11.3 per cent of the 2,992 primiparas in the series. Of the 337 women, 231 were between 30 and 35 years of age; eighty-five between 35 and 40, and twenty-one from 40 to 45 inclusive. Only eight women were over 40: two of these were 41, three were 42, two were 43 and one was 45. She concludes that speaking generally, neither fetal nor maternal mortality is increased above levels generally accepted as normal and the average duration of labor is only slightly prolonged. About 20 per cent of the women have strikingly rapid and easy labors. Dystocia may be expected in about 15 per cent of the cases but is usually dependent on complicating factors rather than on age alone. A careful consideration of the patient will usually enable one to make a fairly accurate prognosis even before labor starts. Abnormal presentations and contracted pelves, both of which are more frequent than in younger patients, increase the necessity for operative intervention and with it the danger to both mother and child. A woman beginning labor with the head engaged in a normal pelvis in an occipito-anterior presentation has little likelihood of difficulty. If she has good pains, her likelihood of having dystocia is almost negligible. The most important single factor in prognosis is the quality of the uterine contractions, and this unfortunately cannot be accurately prognosticated until after labor has set in. It is known that the frequency of inadequate pains increases with advancing age and it is probable that a consideration of the physical type of the patient and of her history, such as that of a previous long-standing sterility, will be of greater importance the more accurately it is observed. The development of the cervical cesarean section in recent years makes it possible, without materially increasing the risk to the mother, to await labor, observe the type of uterine contractions and then, if these seem insufficient to carry the patient through successfully, perform cesarean section. A rather high percentage of cesarean sections will probably always be necessary, especially in the older women and in those with previous long-standing sterility, for the greatly increased value of the child in these cases makes it desirable to minimize fetal risk.

REASONABLE CHARGES

Some medical and most surgical fees, I contend, are entirely too high, and must be scaled down to a level commensurate with the income of the rank and file of the heads of families. It is also my contention that it is high time that the medical profession came to a complete realization that the practice of the healing art is a social agency which demands of each aspirant for a medical degree that he comprehend that the vocation is one which demands a will for public service, wholly divorced from the ideal of accumulating a large surplus of material wealth.

This does not mean that the medical practitioner is not entitled to be well paid for service of a character which demands a high order of intelligence, as well as a minimum of seven years of preparation. It does mean that no physician, no matter how superior he may be to the rank and file of the profession in some one or more branches of practice calling for technical skill of a high order, has a moral right to become immensely wealthy by charging the great middle class of the American people exorbitant fees.

—F. H. Kuegle, in *Med. Econ.*

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DR. HERMAN von W. SCHULTE, Dean

Student, Scientist, Teacher, Executive, Humanitarian, Friend—thus may be summed up the major qualities of the late Dean Herman von W. Schulte.

In the passing of Dean Schulte, Nebraska has lost one of its foremost men and the medical profession one of its greatest scientists and teachers.

As Dean of Creighton University, College of Medicine, his influence for good on a generation of younger medical men has been incalculable.

As a representative of idealism in medicine he has had few equals.

As an anatomist he was well known throughout this country.

His active interest in Omaha, Nebraska and National welfare work stamps him as a humanitarian of the first order.

He was a friend of all and beloved by all who came into contacts with him.

Service was his watchword.

We may well say—"His equal was never!"

"THE CARE OF THE DYING"

This altogether unusual subject is discussed by Dr. Alfred Worcester in the *Journal of Medicine* for April. One rarely reads an article so full of worthwhile suggestions to the practitioner, so we make bold to cull a number of paragraphs:

"During the past half-century, as we all know, there has been vast improvement in midwifery. But, instead of any progress in the art of caring for the dying, medical practice seems to have deteriorated. In fact, many doctors nowadays, when the death of their patients becomes imminent, seem to believe that it is quite proper to leave the dying in the care of nurses and sorrowing relatives. This shifting of responsibility is unpardonable. And one of its bad results is that as less professional interest is taken in such service less and less is known about it.

"Inasmuch as all of our patients, as well as we ourselves, must die sooner or later, it might naturally be supposed that the care of the dying would receive more attention."

Following an enumeration of the signs of approaching death he proceeds:

"The process of dying is a progressive, not a simultaneous, failure of the vital functions. This progress is usually from below upwards. Thus, sensation and power of motion as well as the reflexes are lost in the legs before in the arms. And in the intestinal canal, before the patient can no longer swallow, the anal sphincters relax, peristalsis ceases, and the stomach simply distends with what is swallowed. The folly, under such conditions, of attempting to give nutriment or medicine by either mouth or rectum is apparent, as it will likely be regurgitated or immediately discharged. The folly of it becomes even more glaring when later there is at least equal chance that the fluids given by the mouth will run down the trachea. This is not an infrequent cause of the 'death rattle,' which even if it does not disturb the patient, as in fact it often does, is nevertheless a needless addition to the distress of the family. If the rattle is due to hypersecretion of the bronchial mucosa it can sometimes be stopped by the hypodermic injection of a large dose of atropine.

"As long as the patient can swallow, water either pure or mixed with sour wine is all that should be given. This should be offered with increasing frequency but in lessening amounts. Towards the last, after even a few drops would cause choking, if a gauze wicking, one end of which is held in a cup of ice water, is put into the patient's mouth it often will be gratefully sucked.

Except for drawing in the breath, sucking is the body's last as it is the first instinctive action. Thirst is our first and last craving. The complaint just before death on the Cross was 'I thirst.' And then the sponge dipped in vinegar was the kindest possible offering."

"The chamber should be well lighted as the patient enters the valley of the shadow. The dying, as long as they are able to do so, instictively turn toward the light. Some complain of the growing darkness. A dying consumptive once begged me to carry her from her shaded chamber out into the sunshine. I shall never forget her gratitude or her entrancement as she died looking straight at the rising sun."

"As sight and hearing fail the dying see only what is near and hear only what is dictinctly spoken almost in their ears. They are often disturbed by sounds no longer distinguishable Whispering within their partial hearing is unpardonable. Many seem to enjoy soothing music."

"However painless the final stage, discomfort and suffering are only too possible in the earlier stages of dying. Much of this is avoidable. Some of it, as we have seen, is due to lack of proper treatment or wrong treatment of the patient. In the latter case the harm is generally from failure to recognize that the treatment needed is radically different from what is appropriate when restoration is possible, as for instance in giving nourishment or stimulants when there is only no possibility of their absorption, but also great danger of their regurgitation or of their inspiration. Only less fatuous is the application of artificial heat after the heat regulation of the body fails. All such disturbance of the dying patient is inexcusable. It may be easier in such a case, as it often is in other exigensies, for the physician, against his own judgment of what is best for the patient, to surrender to the prejudices or desires of agonized relatives who do not understand and so cannot accept the facts. All of the physician's patience, tact and sympathy are then needed and, above all, his firmness. If he is unremitting in his attention to the patient he will eventually win the confidence and gratitude of the family; and meanwhile, what is of more worth, he will have the satisfaction of knowing that he is doing as he would be done by."

He mentions the dryness of tongue which he suggests can be relieved by vaseline (we would suggest glycerin) or by bits of ice enmeshed in strips of gauze.

"Never should it be forgotten that the reason why patients *in extremis,* or unconscious from whatever cause, so generally are found lying flat on their backs is simply because they are not able either to make known their need of help or to shift themselves from that position. They may still appreciate the comfort that a change affords."

"As the peripheral circulation fails there usually is a drenching sweat, and the body surface cools whatever may be the temperature of the surrounding air. This sweating is most profuse on the upper parts of the body, and on the extensor rather than on the flexor surfaces as in health. Sponging off his sweat with cloths wrung out of diluted alcohol often comforts the patient.

"However cold the body surface becomes, the dying are almost never conscious of cold—on the contrary, they usually feel too hot."

"Even when supposed to be unconscious the restlessness of the dying is often caused by this sensation of heat. As the surface cools, their inward temperature instead of lessening as in ordinary collapse, rises high. Their tossings are often only their efforts to throw off the bedclothes. Lighter and less covering is what is needed—not artificial bed heaters from whose burning the patients may shrink."

"Fortunately, the discomfort and suffering of the dying almost always can be relieved by medical treatment. The occasional serviceableness of atropine has been mentioned. Opiates are indispensable. If morphine fails to give comfort, a hundred to one it is either because too small doses have been given or because it has not been successfully introduced into the enfeebling circulation. Large and frequent doses may be needed. There is no limit to the amount that may properly be given. As the end approaches, a full grain is not too much of a dose."

In closing he quotes Dr. Harvey Cushing's version of the mother's account of Dr. Osler's care of her dying child:

"He visited our little Janet twice every day from the middle of October until her death a month later, and these visits she looked forward to with pathetic eagerness and joy . . . Instantly, the sick room was turned into fairyland, and in fairy language he would talk about the flowers, the birds, and the dolls . . In the course of this he would manage to find out all he wanted to know about the little patient.

"The most exquisite moment came one cold, raw, November morning, when the end was near, and he brought out from his pocket a beautiful red rose, carefully wrapped in paper, and told how he had watched this last rose of summer growing in his garden and how the rose had called out to him as he passed by, that she wished to go along with him to see his "little lassie." That evening we all had a fairy tea party, at a tiny table by the bed, Sir William talking to the rose, his little lassie and her mother in a most exquisite way . . . and the little girl understood that neither fairies nor people could always have the color of a red rose in their cheeks, or stay as long as they wanted to in one place, but that they nevertheless would be happy in another home and must not let the people they left behind, particularly their parents, feel badly about it; and the little girl understood and was not unhappy."

"If our eyes moisten over this example of perfect practice of our art, let no despair from being so far behind this great master prevent us from following such leadership. Above all, let us remember that our duty to our patients ends only with their death, and that in the preceding hours there is much that we can do for their comfort. At the very least, we can stand by them."

SOCIAL INSURANCE UNDERMINES NATIONAL CHARACTER

Parasitism is today the corroding canker of modern civilization and anything which favors its growth and dissemination should be unequivocally condemned and most vigorously opposed.

The proponents of Compulsory Health Insurance or National Insurance, as it is called in England, reiterate again and again that these and the dole are totally different. In name and administration, yes; in effect, no. They both encourage people to want something for nothing or much for little which in effect makes parasites out of them. Almost endless illustrations supporting the statement that Compulsory Health Insurance and the dole are alike in effect could be produced but one will have to suffice. Liek, in his book recounts the following experience he had while a Krankenkasse physician in Germany. A middle-aged man came to him for an examination with the view of securing sick benefit. Liek examined the patient carefully; could find nothing the matter with him; in fact, found him an unusually well-developed and robust individual. He told the man the facts and elicted the following story. The man told Dr. Liek that he was the only man in his village that did not get some kind of a government stipend, sick benefit or dole or pension and that everybody was ridiculing him because of this.

No one who is at all familiar with Bernard W. Shaw's writings will ever accuse him of being in favor of the present economic system in England. He has the following to say about the dole: "The Labor Party has just twisted conditions all around. They taxed people who live on unearned income, and create their own leisured class—people who live on the dole. The dole is not much but if you have four or five in one family living on dole you have a hostel or leisured people living very well. That must cease."

The whole Social Insurance scheme is based on the ethically indefensible theory that individuals are entitled to things that they have not earned and on the politically unsound doctrine that society owes every citizen a comfortable living whether or not he repays society by doing his fair share of the world's work. Under Compulsory Health Insurance the individual who works only half-time is entiled to just as much free medical service and is likely to get much more in sickness benefits than he who works full time. Not only this; it actually encourages immorality and riotous living as the following personal experience well illustrates. As a young man I worked two seasons in a lumber camp. The camp in which I lived comprised between thirty-two and forty men. Of this number only one did not use intoxicating liquor; only two did not use tobacco; and half of the men spent their hard-earned wages either at the saloons in the nearby town or went regularly to the Island or did both. Those who are familiar with the Islands of the upper Mississippi river need no explanation as to why they went there. I wonder how Health Insurance, insuring these men for loss of time and providing free medical care for them, would have prevented their doing the very things which were the cause of much of their sickness. For my part, I believe that a larger percent of them would have gone to the Island if they had felt that they would be protected against loss of time and that they would receive free medical care if they became sick. Health Insurance would actually have increased not only sickness but immorality as well in this camp.

A recent survey of five thousand students at the University of Minnesota found only ten or two per thousand with positive Wassermans. Careful surveys in various parts of the country indicate that about three per cent or thirty per thousand of the general population of the United

States is syphilitic. A Wasserman examination of three thousand prisoners in the Southern Illinois penitentiary revealed the fact that three in ten or three hundred per thousand were syphilitic. This same ratio undoubtedly pertains to the class most criminals come from and raises the average in the general population.

It is a well-known fact that alcoholics and those suffering from venereal diseases are much more liable to loss of time from sickness than are those not so affected. What right has any just government to take of the earnings of the two first groups without their consent and give them to the third group? A just and humane government protects the weak from oppression and exploitation by the strong and unscrupulous; but a just and wise government does not penalize the strong, industrious, clean-living and thrifty and favor the weak, lazy, shiftless and immoral. Giving the weak, lazy, and shiftless undue advantage over the strong, industrious, and thrifty actually penalizes and handicaps the latter, interferes with the law "of the survival of the fittest", and must eventually lead to race degeneracy. If the white race persists in this course long enough, the "yellow peril", so often glibly and jokingly mentioned, may become a real menace to western civilization.

All independent writers on the subject state, and even the proponents of Compulsory Health Insurance have to admit that it has tremendously increased occupational neuroses, and that is just what was to be expected and was expected by those who know human nature and can see just a little further than the ends of their noses.

The following quotation from a paper by William H. Hicks is pertinent—"In accident cases, where the question of compensation is involved, conditioned reflexes are sometimes created by the patients' environment that not only retard recovery but instigate additional symptoms; or may lay the foundation for successful malingering."

One of the worst features of Compulsory Health Insurance is that if continued long enough it will crush out of character the three capital I's —Independence, Industry and Integrity. Such schemes are as Guglielmo Ferrero, the eminent Italian historian rightly says, "artificial", and "While they tide over trifling evils of the moment, they lay up for the future troubles and difficulties and dangers of infinitely greater gravity."

(To be continued)

—Edward H. Ochsner, Chicago.

SECRETARY ILLINOIS MEDICAL SOCIETY ON CRIPPLED CHILDREN'S CLINICS

Dear Doctor Long:

I have just read with much interest, the article appearing in your July number, by Dr. F. W. Buckley, entitled "Elk's Crippled Children's Clinics." I am herewith enclosing a reprint of an article appearing in the *Illinois Medical Journal* in May of this year, which may be of interest to you, as it shows that a county medical society can sponser and supervise it's own clinics. This happens to be my own county society, and the clinic we established six years ago, is doing more and better work today, than ever before, largely because we have sold the idea to our community that such clinics are necessary, and that all clinics to be successful, must be "owned and operated" by medically trained people. The matter of records is a highly important necessity, and we have developed a system which we believe, is as nearly perfect as it can be made.

The Elks in Illinois, is sponsoring clinics for the care of Crippled Children, but the financial obligation on the part of this organization, is limited to administrative expense only, and it is left to the local lodges throughout the state to solicit funds for other costs locally. This can be done in any community by the county medical society, in a manner similar to that used by Elk's clubs. In my own community, the Elk's club has an annual charity ball, the entire receipts of which are placed in the Crippled Children's Fund. The many cooperative organizations, such as the Federation of Woman's Clubs, the P. T. A., P. E. O., or any one of a number of other similar organizations in every community can do this same work, in a better way, as they have a local appeal, that the other organizations do not have.

Medical activities should be arranged and managed by medical people, and credit should be given to those to whom it is due. No clinic can be successfully operated anywhere, unless it is under medical management, and, of course, all organizations endeavoring to assume responsibility for any medical activity, must necessarily depend on members of our profession, for a successful conclusion to their activities. Why not, therefore, keep the activity entirely under medical control, and give proper credit to the many cooperative and willing organizations desiring to work with us? The writer is a member of the Elks, and desires to pay his tribute to the great work they are doing in many of our states, and for several years, he has been chairman of the crippled children's committee of the local Elks club, and consequently, we have kept in close touch with this work. The Illinois State Medical Society has for a considerable number of years, believed that State and County Medical Societies should do everything possible to help the unfortunate in our various communities, and has realized that one of the greatest appeals, has been the care of the crippled child. Unfortunately, many of these cases do not come to the family physician, and many times, cases are presented to a clinic well established, that even the family physician knows nothing about, for many of the parents of these unfortunate children, have a type of reticence that is deplorable, and by this evasion, really tend to develop in the child, an inferiority complex that should not exist.

We are considering at this time, a plan whereby all charges of unnecessary pauperization of those not deserving it, will be removed, by making a nominal charge to the parents of all crippled children who are able to pay a small fee, when the child is seen by our clinicians. This has been suggested by the willingness of many who bring their children to our clinic, to pay for services, according to their means, and if a charge of only one dollar is made, it gives these people a sense of responsibility they would not otherwise assume, and it will bring many children to our clinics for care, who otherwise might not come.

The care of the cripple, as well as the care of all under-privileged citizens, is one of the responsibilities of every community, and the idea can be readily sold to every dinner club, Woman's club, or Fraternal organization in such a way, that they will at once be enlisted as cooperative organizations, who will make the drive for funds which can be collected in some way or other, even in our smallest communities. In the sparsely settled communities, it is possible for several counties joining together, and have a district crippled children's clinic, entirely under supervision of medical societies.

In closing, I wish to state emphatically, that we have nothing but the highest regard for any organization to take the initiative in the establishing of clinics for the care of the crippled children, and they deserve much credit for their activities, but we do know that they are entirely dependent of the work of the physicians to get the desired results, and so long as this is purely a medical problem, which must have medical cooperation to be successful, why not go one step farther, and make the entire work a society affair, and give proper credit to the many lay groups who are ever willing to aid in every way possible, and place as their responsibility, the solicitation of funds, one of the most essential factors in the successful operation of crippled children's clinics? The Warren County Medical society has received many inquiries for information relative to the operation of their clinic, and the society is ever willing to give any information desired by anyone upon request for same.

Yours very sincerely,

—H. M. Camp, Monmouth, Ill.

FIFTY-TWO YEARS IN MEDICINE—DR. GEORGE J. RUBELMAN

Dr. George J. Rubelman, Tecumseh, has been in the practice of medicine fifty-two years.

Dr. Rubelman was born at Linden, Ohio, May 17, 1856, and his parents brought him to Muscatine, Iowa, in 1861.

After leaving the public schools, he completed a business course in Chicago. He attended the Medical Department of the Iowa State University one year and then went to Rush Medical College, Chicago, where he was graduated February 24, 1880.

DR. GEORGE J. RUBELMAN

Following graduation he practiced at West Branch, Iowa, for about five years, after which, in 1885, he moved to Wilber, Nebr., where he remained about fourteen years. He located at Tecumseh, in April, 1899, and has been in active practice there since that time. He has been president of the Johnson County Medical society several times and has been a faithful and consistent member of the Nebraska State Medical Association since he came to Tecumseh.

He has been county coroner and has served on the city council and on the board of education. He has always interested himself in community affairs as all good citizens should.

Dr. and Mrs. Rubelman have two sons and two daughters.

OBSTETRICAL AND GYNECOLOGICAL HINTS. NO. VI

The exaggerated lithotomy or Sims position will increase the pelvic outlet ½ cm. This often is the difference between a normal delivery and forceps extraction with its attendant increased morbidity and mortality.

—Harold S. Morgan, Lincoln.

DERMATOLOGIC HINT NO. VI

Coin sized, dry, scaly lesions of over two months duration about the face and hands of adults past forty-five years of age are usually precancerous and should be removed.

—D. J. Meson, Omaha.

EDITORIAL PARAGRAPHS

Physicians complain about collections; but remember we made the world safe for democracy.

The *facies Hippocratica*: "The nose sharp and pinched, eyes sunk in orbits, and hollow, ears pale, cold and shrunken with lobes inverted, face pallid, livid or black."

A Denver physician, widely heralded as a former Nebraskan, is under indictment for performing an illegal operation, the patient dying. Such notoriety is not appreciated by the Nebraska profession.

Four hundred cases of poisoning by the bite of the black widow spider have been reported. Twenty cases of this disease were seen in one Los Angeles hospital during the past year. The black widow spider is recognized by a bright red patch on its abdomen. Persons frequently are bitten by this spider in outside water closets, which the spider frequents.

The new Douglas County hospital (Omaha), built at a cost of about $900,000, was dedicated June 27. The hospital is five stories in height and will provide beds for 135 tubercular patients and 85 beds for psychiatric cases. The new hospital will have a staff of forty physicians, ten internes and thirty nurses. The hospital has been accepted by the American College of Surgeons and the American Medical Association.

The Nebraska friends of Dr. Henry Baldwin Ward, Urbana-Champaign, Ill., for some years dean of the University Medical College, then at Lincoln, will be interested to learn that in recognition of his outstanding scholarship in biological science and his constructive work in the conservation of wild life and natural resources through the application of scientific principles and an awakened public consciousness, has been awarded the degree of LL. D. by the University of Oregon.

A Baumanometer thief has made his appearance and the profession is warned to be alert. A man giving his name as "Walsh" appeared at the office of Dr. Olga Stastny, Omaha, recently and offered to trade her a "life-time Baumanometer" for her instrument. Not succeeding he offered to have it sent to the manufacturer for reconditioning. On this proposition he took away Dr. Stastny's instrument—and she is out. He represented himself as the representative of Betz and Co. Correspondence with the Betz firm brought the information that the same trick had been worked in parts of Indiana and other states, the man going under the name of T. W. Scott, and sometimes representing himself as agent for Aloe and Co., and at other times as representative for Betz; but in each instance his game was worked with the Baumanometer.

Dr. J. E. M. Thomson, Lincoln, attended the last meeting of the American Orthopedic Association which was held in Toronto the middle of June and read a paper on the subject "Clinical and Experimental Observation With Regard to the Injection of Certain Agents (Pregl's Solution) Into Chronic Arthritis Joints." The paper dealt with the treatment of chronic synovitis associated with arthritis due to infecion and injury, first by withdrawing the effusion from the joint and replacing it with the small amount of Pregl's solution at intervals of one week. Pregl's solution, by the way, is a non-irritating, non-staining, iodin solution (clear). The series of cases that were reported, after the first injection of Pregl's solution the effusion diminished and the thickened synovia seemed to melt away leaving a more favorable opportunity for alleying arthritis, markedly decreasing the period of disability.

Cesarean section as a life saving measure is one of the most wonderful and most spectacular procedures in medicine; but what shall one say to the rather frequently reported cases of patients scheduled for cesarean section, who, being rebellious to their sentence, deliver themselves before the cutter is ready? A young woman from a nearby village on her way by auto to the hospital for a cesarean section became critically ill, was taken to a nearby farm home along the highway and delivered herself. In a neighboring town a prospective mother awaiting a cesarean in the hospital delivered herself while the operator was getting ready to do a cesarean section. In another city not so far away it is reported a young woman ready for the operating room, delivered herself in an anteroom, while the surgeon was scrubbing for the operation. Such things are a disgrace to the profession. Verily there are cutters and operators and surgeons.

NECROLOGY

Herman von W. Shulte, Omaha, dean of Creighton University College of Medicine, died of organic heart disease July 13, 1932, aged fifty-five years.

"Dr. Schulte was born in Utica, N. Y., the son of Rev. Bernard Schulte, an Episcopal clergyman. He was graduated from Trinity college, Hartford, Conn., as a bachelor of arts in 1897, and received his degree in medicine from Columbia university in 1902.

He became successively demonstrator, adjunct professor, assistant professor, associate professor of anatomy, member of the faculty of the pure science and of medicine at Columbia university between 1904 and 1917; then junior dean and professor of anatomy at Creighton, where he became dean of the school of medicine in 1918, serving in that capacity until his death. Since 1918 also he had been chief of the staff at St. Joseph's hospital.

Dr. Schulte was permanent chairman of the Nebraska review of the White House Conference on Child Health and Protection, a position in which he gained national recognition.

He was a member of the Omaha-Douglas County Medical society, in which he held various offices; the American Medical association; Association for the study of Internal Secretions; Catholic Hospital association; Harvey society; Nebraska State Medical association; United States Public Health association; National Tuberculosis association; American Academy of Political and Social Sciences; Nebraska Conference for Social Work, of which he was president in 1929-30; Society for the Relief of the Disabled, of which he was a trustee; the Nebraska Writers' Guild, of which he was president in 1930. He was a member of the board of the Public School Lunch and Milk Fund; of the board of governors of the Omaha Chamber of Commerce and councilor to the women's division of the chamber; was president of the Council of Social Work in 1929-30, and president of the Omaha chapter of the American Inter-professional Institute, 1924-26.

He was board member of the Omaha public library from 1927 to 1930, and was president of the Omaha Art Institute, 1929-30. He was a fellow of the American Association for the Advancement of Science; vice president of the New York Academy of Sciences, 1915-17; vice president of the Nebraska Academy of Sciences, 1923-24, and president in 1924-25; fellow of the New York Zoological society and a member of the American Museum of Natural History in New York.

He held membership in the Association of American Antomists and the American Society of Mammologists. He was president of the University club in 1927-28, and was a member of the Omaha Athletic club and of the Century club of New York.

From 1918 to 1920, Dr. Schulte was a member of the mayor's committee on communicable diseases. He was a member also of the Omaha World Court committee, and since 1930 its secretary. Since 1922 he had been a lieutenant-colonel in the army medical reserve, commanding general hospital No. 55. He was arbitor in the wage scale dispute involving Omaha newspapers and the Typographical union in 1927; was lecturer for the Omaha school forum in 1928, and lecturer on social work for the Episcopal diocesan conference of Nebraska, 1927-28, and for Iowa in 1930. He was president of the Omaha Council of Social agencies from 1924 to 1928.

He was the author of scores of articles on medical subjects, most of which were published in professional journals."

A widow survives.

Andrew J. Faulk, Mitchell, Nebr.; Sioux City College of Medicine, 1901; member, Nebraska State Medical Association; died April 16, 1932, of uremia aged seventy-four years.

Joseph V. Hinchman, Blair, Nebr.; native of Indiana; Medical College of Indiana, 1885; veteran of the Civil war and an inmate of Libby prison for six months; practitioner at Blair for twenty-nine years; surgeon to the Soldier's and Sailor's Home at Grand Island, 1916 and 1917 and again in 1922 and 1923; member Nebraska State Medical Association until two years ago; a well beloved man, died June 17, 1932 of pneumonia, aged eighty-six years.

Harry Bauguess, Detroit, Mich.; University of Nebraska College of Medicine, 1899; for some time teacher of chemistry in his alma mater; for many years a practicing physician at Diller, Nebr.; connected with the Mayo Foundation in Pediatrics; also studied in Vienna before locating in Detroit, in 1924, as a pediatrician; on staff of St. Joseph's hospital, Detroit, for past seven years; died June 8, 1932, after an illness of ten weeks, aged fifty-seven years. A widow and son survive.

Harvey L. Starkey, Wood River, Nebr.; Barnes Medical College, St. Louis, 1899; located at Wood River since 1909; in medical corps of the Army during the World war; patient past year at government hospital, Hot Springs, S. D., died July 16, 1932, aged sixty-seven years.

NOTES OF A JAUNT ALONG THE LOWER ST. LAWRENCE

The meeting of the American Orthopedic Association was very well attended, the papers were of a very interesting character, entertainment for ladies and guests was profuse and lavish. Mrs. Thomson attended the meeting with me. We were particularly struck by the fact that there was little evidence of depression in Canada. Toronto is growing very fast, a remarkable amount of building is taking place, particularly of residences. After the meeting we drove to Montreal and Quebec, then across the St. Lawrence river, followed the river on the south shore, north and east around the Gaspe Peninsula. One would think on leaving Quebec that you had dropped out of the North American continent and were visiting the fishing villages of the Brittany coast of France; all around the peninsula are beautiful little bays, each one a fishing village where only French is spoken. Aside from local farming and dairying, fishing, but little other industry exists except in certain areas where lumber is cut.

One of these sections where a particular type of birch is grown, practically all the lumber is prepared and sent to England for making bobbins for the textile industry. However, fishing is their chief occupation. The salmon of the Gaspe peninsula is considered the best salmon in the world, though we found the eastern brook trout, lobster, scallops, as well as cod fish very delightful.

Along the shore in every village wire netting is spread and on this thousands of cod fish are dried. We were quite interested in the fact that the heads and viscera of all these fish are very carefully saved and placed on the fields as a fertilizer, they being their principal method of fertilizing their garden spots. One seldom sees an automobile, instead girls and boys on Sunday afternoon drive a horse and buggy. Most of the hauling is done with the old type of French two-wheeled cart, though light hauling is carried by dog carts.

The scenery is extremely beautiful, the mountains rise two thousand feet right out of the sea; the road, which is a splendidly graveled highway and has recently been opened up clear around the peninsula. First down on the sea shore below the rocky crags above, then winding through a little village around the harbour, then up on top over the beautifully wooded mountains, crossing richly stocked trout streams with beautiful waterfalls. The houses are unique, each community confines itself to its particular type. Most of them are built of wood with shingle ends and upright sides. All whitewashed but often in soft colors, the window and door casings are always bright colored—red, blue, yellow, green, etc. Perhaps the back of the house might be white, the ends blue, salmon, or yellow. The people are unusually high type in their appearance, the men and women are rather striking and healthy appearing. The children are beautiful.

After leaving the Peninsula we cut down through New Brunswick and then straight home through New England. Beyond a doubt, this was the most interesting and lovely trip I have had since my last trip to Europe.

—J. E. M. Thomson, Lincoln.

WOMEN'S AUXILIARY PRESIDENT'S ADDRESS*

Mrs. Morris Nielsen, President, Women's Auxiliary,
Nebraska State Medical Association,
Blair, Nebr.

As we come to the close of another year and I pause to analyze the chief functions of the auxiliary, and summarize the work that has been done in Nebraska and other states, I am convinced that an auxiliary to the Nebraska State Medical Association is not only worthy of existence, but is a real necessity.

Our possibilities and opportunities become more perceptible as time goes on. The greatest task we have before us is not how much we do, but how well we do it. If we can lend dignity as well as assistance to the noble profession to which we are subsidiary, I do not feel that our organization owes any apology for its existence. We do not take any aggressive stand without it has the sanction of the State Medical Association. We should be truly auxiliary, and be ready and willing to do what we are asked.

In an organization such as ours, which is operating solely for the purpose of being helpful, there are many ways whereby we could and should lend a helping hand without waiting to be asked. We are in position to increase mutual interest among families of the medical profession, thus doing much to promote amity. I think we should also consider the wife of the young doctor who locates in a small town. In many instances the doctor is in a fair way to make a success in the practice of his profession, when his wife suddenly announces that she is dissatisfied and wants to move. She gives as her chief reason that there are no social activities to interest her. This may be true, but she fails to take into consideration that she could help her husband to attain experience an self confidence in his work, as well as progressing financially if she would be a little more considerate and not think of herself alone. There are civic and community interests that can attract her attention, and she should remember that we cannot hope to start out early in life as well situated as after we have put forth our efforts for a number of years.

There are also instances where a potentially fine young man, with high ideals, drifts into unethical practices by reason of demands made upon him by a well meaning but thoughtless wife, to the extent that he loses his resistance and grants her demands, regardless of consequences. While these are but rare occurrences, they are, however, worthy of thought and consideration. I think we should cultivate the acquaintanceship of these younger women and point out to them some of these truths. I am quite familiar with these problems as I lived in a very small town for the first six years of my married life.

Any organization reflects the character of those who make up its membership, and it is not possible for the officers alone to carry the load. This must be borne by the membership as a whole, for by your co-operation and helpfulness and loyalty, will the results be measured.

This year's work has been interesting as well as gratfying. Work with the officers and committee chairmen has been a real pleasure and a great satisfaction. To them goes all of the credit for whatever has been accomplished. It is with much pleasure that I pay to them this tribute for their cheerful, efficient and helpful services. For the coming year I wish you and the new administration joy and success in whatever may be your undertaking.

AUXILIARY NOTES

A summary of Mrs. Arthur McGlothlan's paper, "Reasons for a Woman's Auxiliary."

These are the chief present functions of the auxiliary:

Social—To promote good fellowship, aid in entertainment at medical meeting, and increase attendance at such meetings.

Philanthropic—To give community service wherever such service is needed, particularly service related to the work of the medical profession.

Legislative—Education in medical and health laws and participation in such legislation as is requested by the medical society to which we are auxiliary.

Educational—To inform ourselves concerning questions of personal and public hygiene, community co-operation, medical and health laws, national, state and local, state and local health administration, and the relation of the medical profession to the public.

Public Relations—To aid the medical profession in its education work with the public through organizations to which we belong:

(a) By accepting positions of leadership in such organizations, particularly on health committees, so that authentic literature may be chosen for programs and for distribution, that informed speakers may be selected, and that only such types of health projects may be carried on as are shown by our advisory councils to be scientifically sound;

(b) By promoting the distribution of Hygeia, the health magazine published by the American Medical Association.

This is not intended to be a discussion of methods, but it is not amiss to say in this connection that experience has taught us that not all women are interested in all the functions of the auxiliary, and that we advise the division of the membership into interest groups, some performing one function, some another. The larger city auxiliaries particularly have found this the best method for carrying on all phases of auxiliary work.

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*Address given before the Women's Auxiliary, Nebraska State Medical Association annual meeting, Lincoln, May 24, 1932.

Let me repeat that we should not undertake activities that are not approved by the medical society to which we are auxiliary, and that we should not fail to insist on the appointment of an advisory council or counsellor by the medical society.

Finally, I should like to call your attention to the following pertinent quotation from a past president of the American Medical Association: "Wherever the medical fraternity has held out a helping hand to the Woman's Auxiliary it has been gratified to find that the work of the auxiliary flowed along safe and helpful channels, and the results proved worthwhile."

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE GRADUATES OF 1932 AND THEIR INTERNSHIP APPOINTMENTS

Anderson, Ronald C., Starling Loving Hosp., Columbus, Ohio.

Austin, Bruce R., Philadelphia General Hosp., Philadelphia, Pa.

Baker, Ellis E., Evangelical Covenant Hosp., Omaha, Nebr.

Barr, Lowell C., University Hosp., Omaha, Nebr.

Baumgartner, Carl J., St. Margaret Memorial Hosp., Pittsburgh, Pa.

Bowers, Warner F., University Hosp., Omaha, Neb.

Bowles, Arthur W., Grace Hosp., Detroit, Mich.

Burnham, Arnold C., Clarkson Memorial Hosp., Omaha, Nebr.

Callison, Robert L., University Hosp., Omaha, Nebr.

Cogswell, Howard D., Grody Hosp., Atlanta, Ga.

Cooper, James R., Ancker Hosp., St. Paul, Minn.

Dewey, Carroll W., University Hosp., Omaha, Nebr.

Drasky, Stanley, St. Joseph's Hosp., Tacoma, Wash.

Eklund, Harley S., Immanuel Hosp., Omaha, Nebr.

Feldman, Gordon G., University Hosp., Oklahoma City, Okla.

Fenning, Con, Mercy Hosp., Cedar Rapids, Ia.

Fenton, Bryan T., Ancker Hosp., St. Paul, Minn.

Frisbie, Howard I., Grady Memorial (White), Atlanta, Ga.

Fugelso, Erling, University Hosp., Omaha, Nebr.

Gingles, Earl E., Methodist Hosp., Omaha, Nebr.

Groat, Milton Jack, California Hosp., Los Angeles, Calif.

Grow, Max H., University of Indiana Hosp., Indianapolis, Ind.

Gump, Millard E., University Hosp., Omaha, Nebr.

Hankerson, Robert, St. Luke's Hosp., Denver, Colo.

Hay, Bruce H., Parkland Hosp., Dallas, Tex.

Henrickson, J. Bruce, Monmouth Memorial Hosp., Long Branch, N. J.

Hildreth, Roscoe C., University Hosp., Omaha, Nebr.

Hill, E. Scott, Gallinger Municipal Hosp., Washington, D. C.

Hohnstein, Floyd I., Harborview Hosp., Seattle, Wash.

Jeffers, Paul C., Providence Hosp., Seattle, Wash.

Jenkins, Paul H., Clarkson Memorial Hosp., Omaha, Nebr.

Joder, Glen Howard, Hurley Hosp., Flint, Mich.

Jones, Tyre K., W. A. Foote Memorial Hosp., Jackson, Mich.

Jorgenson, Ralph E., St. Mark's Hospital, Salt Lake City, Utah.

Katzberg, Louis W., Clarkson Memorial Hosp., Omaha, Nebr.

King, Ross, Maryland General Hosp., Baltimore, Md.

Ledesma, Serapion, St. Margaret Memorial Hosp., Pittsburgh, Pa.

Lemere, Frederick, University Hosp., Omaha, Nebr.

Leon, Tim D., Good Samaritan Hosp., Portland, Ore.

Loken, Theodore, Fairview Hosp., Minneapolis, Minn.

McGreer, John T., Jr., Montreal General Hosp., Montreal, Canada.

McKittrick, Norval W., Columbia Hosp., Milwaukee, Wis.

Malcolm, Donald C., University Hosp., Rosedale, Kans.

Margolin, Julius M., Immanuel Hosp., Omaha, Nebr.

Mason, Claude T., University Hospital, Omaha, Nebr.

Mason, James A., Emanuel Hospital, Portland, Ore.

Matchett, Foster L., Cleveland City Hospital, Cleveland, Ohio.

Mathis, Glen H., Emanuel Hospital, Portland, Ore.

Meidinger, Ray, Parkland Hospital, Dallas, Tex.

Miller, N. Richard, Northern Pacific Benefit Association Hospital, St. Paul, Minn.

Moore, Ferral H., U. S. Army, Letterman General Hosp., San Francisco, Calif.

Morrow, Hamilton H., Allegheny General Hospital, Pittsburgh, Pa.

Morrow, Paul N., Temple University Hospital, Philadelphia, Pa.

Nelson, Floyd C., University Hospital, Omaha, Nebr.

Nygren, William T., Northwestern Hospital, Minneapolis, Minn.

Oakley, E. Reed, University Hospital, Omaha, Nebr.

Osborn, Clarence R., Iowa Lutheran Hospital, Des Moines, Iowa.

Petersen, Peter C., Northwestern Hospital, Minneapolis, Minn.

Pinto, Sherman S., Billings Memorial Hospital, Chicago, Ill.

Platt, Paul C., Kansas City General Hospital, Kansas City, Mo.

Prachar, Gordon A., Northwestern Hospital, Minneapolis, Minn.

Rathmann, William G., U. S. Public Health Service, U. S. Marine Hospital, Chicago.

Reeh, Merrill J., U. S. Public Health Service, U. S. Marine Hospital, Chicago.

Rice, James E., Iowa State University Hospital, Iowa City, Ia.

Rosenbladt, Louis M., Evangelical Covenant Hospital, Omaha, Nebr.

Serel, William F., St. John's Hospital, Cleveland, Ohio.

Sharpe, John C., Johns Hopkins Hospital, Baltimore, Md.

Spencer, Alfred G., Southern Pacific General Hospital, San Francisco, Calif.

Staubitz, Herbert F., Tacoma General Hospital, Tacoma, Wash.

Stewart, John N., Immanuel Hospital, Omaha, Nebr.

Stillman, Freeman L., St. John's Long Island City Hospital, Long Island, N. Y.

Strand, Clarence J., Jennie Edmondson Hospital, Council Bluffs, Iowa.

Sturdevant, C. Oliver, Emanuel Hospital, Portland, Oregon.

Sweet, Irwin C., Immanuel Hospital, Omaha, Nebr.

Taber, John H., Douglas County Hospital, Omaha, Nebr.

Thornbloom, Wallace D., Hillman Hospital, Birmingham, Ala.

Tibbels, Randolph H., St. Joseph's Hospital, Omaha, Nebr.

Williams, Harry G., Douglas County Hospital, Omaha, Nebr.

Wortman, Arthur V., University Hospital, Omaha, Nebr.

A depression is like a bad cold. When you get tired of doctoring and forget it, it wears off.—Kenosha (Wis.) News.

INTERNSHIPS, CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, CLASS OF 1932

Arnese, L. G., St. Joseph's Hospital, Reading, Pa.

Bach, A. C., St. Joseph's Hospital, Omaha.

Bacigalupi, A. J., Southern Pacific Hospital, San Francisco, Calif.

Bedinger, F. E., St. Elizabeth's Hospital, Covington, Ky.

Bestgen, F. P., St. James Hospital, Butte, Mont.

Boyne, H. N., International Congree of Paris.

Campion, E. J., J. R. St. Luke's Hospital, San Francisco, Calif.

Cardwell, R. E., Henderson Hospital, Henderson, Ky.

Clayton, J. O., University of Pa., Philadelphia, Pa.

Coogan, J. H., Mercy Hospital, Des Moines, Iowa.

DeGiorgio, M., Morrisania City Hospital, New York, N. Y.

Devin, S. B., Los Angeles City and County Hospital, Los Angeles, Calif.

Dukart, C. R., St. John's Hospital, Fargo, N. D.

Earl, G. L., St. Vincent's Hospital, Portland, Ore.

Fochtman, Mary Catherine, Good Samaritan Hospital, Portland, Ore.

Foley, J. B., St. Vincent's Hospital, Portland, Ore.

Frost, G. A., California Hospital, Los Angeles, Calif.

Gacusana, Jose M., Wichita Hospital, Wichita, Kan.

Garvey, J. E., St. Catherine's Hospital, Omaha, Nebr.

Gaukel, L. A., Mercy Hospital, Council Bluffs, Ia.

Grant, C. A., St. Vincent's Hospital, Portland, Ore.

Harrington, John F., St. Joseph's Hospital, Denver, Colo.

Hederman, A. R., Providence Hospital, Seattle, Washington.

Heidrick, P. H., St. Elizabeth's Hospital, Lincoln, Nebr.

Honke, E. M., United States Public Health Service, New Orleans, La.

Jensen, V., St. Joseph's Hospital, Omaha.

Keiser, A. F., St. Joseph's Hospital, Omaha.

Kroupa, W. E., St. Joseph's Hospital, Omaha.

LeFor, F. G., Providence Hospital, Seattle, Wash.

Leuther, P. A., United States Public Health Service, New Orleans, La.

McKay, J. J., Southern Pacific Hospital, San Francisco, Calif.

McNerthney, L. T., St. Vincent's Hospital, Portland, Oregon.

McShane, W. M., St. Mary's Hospital, Cincinnati, Ohio.

Mack, M. A., St. Elizabeth's Hospital, Lincoln, Nebraska.

Mathisean, H. W., Mercy Hospital, Council Bluffs, Iowa.

Miller, C. H., St. Joseph's Hospital, Kansas City, Mo.

O'Connor, J. P., Los Angeles City and County Hospital, Los Angeles, Calif.

O'Connor, S. M., St. Joseph's Hospital, San Francisco, Calif.

O'Leary, F. B., St. Catherine's Hospital, Omaha, Nebr.

Palmer, R. C., New York Polyclinic Medical School, New York, N. Y.

Porporato, A. J., Southern Pacific Hospital, San Francisco, Calif.

Ramaciotti, W. S., St. Catherine's Hospital, Omaha, Nebr.

Rich, E. L., St. Elizabeth's Hospital, Dayton, Ohio.

Riklin, H. H., St. Louis City and County Hospital, St. Louis, Mo.

Rosenstein, I., Lebanon Hospital, New York, N. Y.

Scannell, R. C., St. Joseph's Hospital, Omaha.

Stanton, W. P., Santa Rosa Hospital, San Antonio, Texas.

Sullivan, J. R., San Francisco City and County Hospital, Stanford Service, San Francisco, Calif.

Thorough, P. H., St. Catherine's Hospital, Omaha, Nebr.

Tupker, E. P., St. Vincent's Hospital, Portland, Ore.

Wald, H. A., St. Luke's Hospital, San Francisco, Calif.

THE DOCTOR IN LITERATURE

Doctors in Fiction

Ashton. Dr. Serocold.
Balzac. Country doctor.
Cable. Dr. Sevier.
Connor. Doctor.
Deeping. Ropers Row.
Deland. Dr. Lavender's people.
Douglas. Magnificent obsession.
Duncan. Dr. Luke of the Labrador.
Gibbs. Hidden city.
Glaspell. Glory of the conquered.
Harrison. V. V's. eyes.
Jewett. Country doctor.
Lewis. Arrowsmith.
Lincoln. Dr. Nye of North Ostable.
Maclaren. A doctor of the old school.
Oppenheim. Dr. Rast.
Prouty. White fawn.
Richardson. Ultima Thule.
Richmond. Red Pepper Burns.
Rinehart. K.
Trollope. Dr. Thorne.
Young. My brother Jonathan.

Famous Medical Men

Chalmers. The beloved physician—Edward Livingston Trudeau.

Eckstein. Noguchi.

Finger. Davis Livingstone; explorer and prophet.

Lambert. Medical leaders from Hippocrates to Osler.

Munthe. The story of San Michele.

Reid. The great physician; a short life of Sir William Osler.

Stanley. How I found Livingstone.

Vallery-Radot. Life of Pasteur.

Frontiers of Medicine

Buck. The dawn of modern medicine.

De Kruif. The microbe hunters.

Fishbein. Frontiers of medicine. In "Biology in human affairs", by East.

Fishbein. The medicine of the future. In "The drift of civilization."

Hartzog. Triumphs of medicine.

Tobey. Riders of the plagues.

TUBERCULOSIS ABSTRACTS

Old Tuberculin discovered by Robert Koch in 1890 is a mixture of the bouillon and all metabolic products of the tubercle bacilli grown on it. Greater precision of the tuberculin test is highly desirable and for this a more specific and less variable testing substance is necessary. The chemistry of the tubercle bacillus has for some years been studied by investigators selected by the Research Committee of the National Tuberculosis Association, of which William Charles White is chairman. One of its results has been the isolation of a protein, which is designated as MA100. This substance causes the typical skin reaction in persons infected with tubercle bacilli. To test the reliability and practicability of it a study was carried on cooperatively by a number of workers. An analysis of the results is reported by Mariette and Fenger in the March, 1932, American Review of Tuberculosis.

A NEW TUBERCULIN

MA100 is obtained from different types of tubercle bacilli and the timothy-grass bacilli. The protein is identical with the original tuberculo-protein isolated by Seibert. The bacilli are grown on Long's medium, a synthetic medium of fixed-standard composition, which is protein-free before culture. After growth the bacilli are removed by filtration and the protein of the medium is precipitated at a given isoelectric point by glacial acetic acid. Thus the identical substances are constantly brought down and these are not subjected to any denaturing process with heat or chemicals. The diluent was normal saline solution. Thus the testing substances contain no phenol or glycerine.

Four types of acid-fast bacilli were used, namely, the human, the bovine, and avian types of tubercle bacillus and the timothy-grass bacillus. The corresponding proteins obtained have been designated as MA100 Human, MA100 Bovine, MA100 Avian, and MA100 Timothy. The origin and virulence of each of the strains of bacilli from which the protein substances were derived, is known. The O. T. used for comparison also is of known derivation and sensitivity. Therefore, the reactions obtained can be safely compared and checked.

Old Tuberculin, as it is now marketed, is standardized on the basis of the minimum dose required to kill a tuberculous guinea pig. It has recently been shown, however, that O. T. contains a polysaccharide which is equally as lethal for tuberculous guinea pigs as is the acid-fast bacillary protein, but it produces no reaction when injected into the skin of tuberculous animals. Thus, standardizing tuberculin on the basis of the minimal lethal dose tells us nothing about its skin-testing potency. As a consequence, O. T. is known to differ as much as 400 per cent in that respect.

PROCEDURE

For this study, the dosage of O. T. was established at 0.01 mgm. The MA100 human protein was diluted with normal saline solution to give the same skin reaction as that obtained with the established dose of O. T. This proved to be 0.000,5 mgm. If the skin reactions to these doses were negative at the end of 48 hours, the test was repeated with double the dose. The amount of MA100 of the several types necessary to produce a reaction comparable with that of the established O. T. was found to vary so that the following dosages were finally determined:

Tuberculin O. T.	0.01 mgm.
MA100 Human	0.0005 mgm.
MA100 Bovine	0.0001 mgm.
MA100 Avian	0.001 mgm.
MA100 Timothy	0.01 mgm.

QUESTIONS INVESTIGATED

Answers to five questions were sought.

1: Is the MA100 human protein more sensitive and more selective than O.T.?

A total of 2,328 individuals were tested simultaneously with O. T. and MA100 human. The group included general hospital patients, both adults and children, sanatorium employees ranging in age from 17 to 73, a general population group composed of nurses in general hospitals, medical students and school children in a rural section. The results are presented in detailed tables in the original article. It was found that more individuals reacted to the MA100 human protein than to O. T. and this was true of known cases of tuberculosis as well as in the general population group.

2: Are the doses recommended safe or are dangerous reactions encountered?

The reactions to the initial dose of O. T. and to the different MA100 proteins were compared. Reactions were recorded as plus one to four. Necrosis is associated only with a four-plus reaction and of these there were none in the series. There were no constitutional reactions in any of the tests but there were seven reactions which might be called disagreeable in that they were accompanied by lymphangitis or enlarged, painful axillary lymph nodes or superficial vesicles, which were not followed by or associated with necrosis. None of the reactions might be called dangerous. Two of the seven disagreeable reactions occurred with O. T. One with MA100 human protein, one with MA100 bovine protein, two with MA100 avian and one with MA100 timothy.

3: Are the doses recommended and used in this study large enough or should they be increased?

Of 540 clinically tuberculous individuals 91.1 per cent reacted to the established doses of MA100 human protein. In another group of 314 clinically tuberculous individuals 92 per cent reacted to both the initial and repeat doses of MA100 human protein. The 8 per cent of this group who failed to react either died or left the sanatorium before the test could be repeated.

By means of another series of tests, an attempt was made to determine whether or not a higher dose would yield a higher percentage of positive reactors. The authors conclude that the doses of the MA100 human protein as recommended (0.0005 mgm. and 0.001 mgm.) are apparently large enough and, therefore, need not be increased.

4: Are the various MA100 proteins specific in that they will pick up only infections by the bacillus from which they are isolated?

An analysis of the percentages of positive reactions in several thousand individuals tested with O. T. and the different MA100 proteins justified the authors in concluding that the bovine, avian and timothy MA100 proteins are not specific. They question whether O. T. in high concentration of a mgm. or more is specific. In small doses of O. T. and MA100 human protein, the reaction is apparently specific.

5: Is there a protein substance common to all acid-fast bacilli?

Comparison of reactions from O. T. and the several MA100 proteins lead the authors to conclude that there is apparently a protein substance common to all acid-fast bacilli, which if given in large enough doses will call forth a typical tuberculin reaction in just as large a proportion of the people as does O. T.

CONCLUSIONS

1. The MA100 human protein is as sensitive and as selective as O. T., and probably more so.
2. The initial and repeat doses recommended for the MA100 human protein are safe in that dangerous reactions are not encountered.
3. The initial and repeat doses recommended for the MA100 human protein are large enough to pick out the majority of tuberculous individuals and apparently do not need to be increased.
4. The MA100 proteins are apparently not specific in large doses at least.
5. There is apparently a protein substance common to all acid-fast bacilli, which, if given in large enough doses, will elicit the same type of reaction as that obtained from Old Tuberculin.
6. As the MA100 protein represents a substance in a purified form which can always be reproduced at the same isoelectric point and which can be weighed out in milligram doses, so that the exact milligram content of the solution is known, it is a better testing substance than Old Tuberculin.

Among the workers mentioned by the authors as participators in the study are:

Elmer M. Funk
F. M. Huntoon
H. J. White

J. Aronson
Fred Carter
Everett K. Geer
Harold Diehl
D. R. Hastings
Florence Seibert
Parke, Davis & Co.
H. K. Mulford Laboratories
Peter Masucci
Kenneth L. McAlpine
Esmond R. Long
Professor H. Valee
L. Van Es
Edward R. Baldwin
M. Dorset
M. I. Smith
W. H. Morriss
John Reichel
National Institute of Health

The Present Status of the Skin Reaction in Tuberculous and Non-tuberculous Subjects, E. S. Mariette and E. P. K. Fenger, in collaboration with Elmer H. Funk, F. M. Huntoon and H. J. White. Am. Rev. of Tuberc., March, 1932.

THE SOCIETIES

The **Madison Six County Medical Society** June meeting was held at Norfolk following a chicken dinner at the hotel by seventy-five physicians and their ladies. The **Northeast Nebraska Five County** group joined in the meeting, omitting their own June meeting to do so. A number of physicians came after the dinner for the program. The following program was carried out:

"Accidental Tissue Transplantations: Report of Three Cases," Dr. B. R. Farner, Norfolk.

"Recent Developments of Endocrinology as Related to Gynecology," Dr. H. E. Harvey, Lincoln.

"Valuable Points in Treatment the Young Bloods Don't Know," Dr. Arthur E. Hertzler, Halstead, Kan.

Dr. Farner reported several cases of accidental transplantation of endometrial tissue into the abdominal incision and the operation for the cure of the condition.

Dr. Harvey gave a resume of the present state of research in endocrinology with special reference to the female sex hormones.

Dr. Hertzler, in his inimitable manner, paid a tribute to the almost forgotten clinical bedside methods of diagnosis and treatment. He did not condemn modern laboratory methods, as one might at first thought conclude; rather he brought out the older methods of observation and care of patients. He suggested the use of iodide of potassium for old cases of bronchial asthma in adults and iodide of iron for children. These are old and tried and now almost forgotten remedies of undoubted value. For intractable sciatica he injects 1% of quinine and urea into the quadratus lumborum muscle about two finger's breadth above the ilium.

The **Dodge County Medical Society** meeting for June resolved itself into a picnic at the Fair Grounds at Arlington on the evening of the 25th.

A **Sixth Councilor District Medical Society** was organized at Stromsburg on the evening of June 27 under the direction of the councilor, Dr. D. D. King. The meeting was preceded by a dinner at the hotel. Thirty-two physicians were present, including Dr. B. F. Bailey, K. S. J. Hohlen and R. B. Adams, Lincoln; Dr. R. W. Fouts and Dr Adolph Sachs, Omaha, and Dr. E. L. Brush, Norfolk. Dr. Dexter King, York, was elected president and Dr. C. L. Anderson, Stromsburg, secretary-treasurer. Considerable enthusiasm was manifested at the organization of what has long been felt as a need and after adjourning all wondered why it had not been done long ago.

The regular meeting of the **Dawson County Medical Society** was held at Cozad, July 1. Eleven doctors of the county were present. Commissioner J. T. Costin addressed the meeting. He pointed out the difficulties of the board in caring for the county dependents and the enormous drain on the county funds through the furnishing of necessities and medical attention. He stated that through revaluation and decreased valuation the funds available will be smaller the coming year and asked the cooperation of the doctors of the county that excessive fees should not, as is sometimes the case, be claimed and rejected, but that they be reduced to the minimum and that cases that should properly go there be sent to the state hospital.

The **Saunders County Medical Society** met at Wahoo, June 30. The formation of the Sixth Councilor District Medical society was reported and it was voted to join the new society, but to also continue meetings of the county society.

Dr. Elmer Hansen, Lincoln, demonstrated the use of obstetric forceps and his demonstration was much appreciated by all present.

—C. W. Way.

HUMAN INTEREST TALES

Dr. C. C. Pelican from Chicago has located at Overton.

Dr. E. T. Hobbs, formerly of Lincoln, has located at Glenvil.

Dr. and Mrs. A. E. Gadbois, Norfolk, have returned from Europe.

Dr. B. F. Gleason was elected head of the Randolph Lions club.

Dr. O. F. Wilmeth of Hershey announces his relocation at Superior.

Dr. T. W. Torpy, Omaha, suffered a fractured ankle in a fall from a ladder.

Dr. C. F. Hille has become associated with Dr. C. W. Doty, Beaver Crossing.

Dr. A. J. Cameron, Herman, attended a class reunion at Toronto, in June.

Dr. R. E. Hall, formerly of Lyons and Fullerton, has located at Portland, Ore.

Dr. Lloyd McNeal, for a short time in practice at Mead, has located at Campbell.

Dr. and Mrs. M. B. Wilcox, Holdrege, spent three weeks in the Colorado Rockies.

Dr. and Mrs. L. M. Shaw, Osceola, spent two weeks at Lake Hackensack, Minn., in July.

Dr. G. A. DeMay and son visited the former's parents at Fort Collins, Colo., in July.

Dr. and Mrs. J. Stanley Hill, McCook, spent the month of July in the Colorado Rockies.

The Dr. J. E. Pulver family of Omaha spent most of the month of June at Lake Okoboji.

Dr. and Mrs. J. C. Waddell, Beatrice attended the Rotary International at Seattle in June.

Dr. W. H. Priest, for twenty-one years located at Harrison, has moved to Mitchell, Nebr.

Dr. and Mrs. B. M. McIntyre, Winside, enjoyed a trip to Arkansas the latter part of May.

Dr. George Moranville, has become associated with his father, Dr. C. F. Moranville, Alliance.

Dr. Gerald G. Henning has located at Norfolk and will limit his work to diseases of children.

Dr. J. N. Plumb, York, has gone on a European trip which will take most of the summer.

Dr. O. D. Johnson and wife, Kearney, spent several weeks in the Minnesota lake country.

Dr. Harry Allerton, Tilden, attended the Reserve Officers Training camp at Ft. Snelling in July.

Dr. Floyd J. Murray and family, Omaha, made a motor trip to visit relatives at Tolorosa, Mexico.

We regret to have to report the death of Mrs. Nolan, wife of Dr. Nolan of Humphrey, July 2, 1932.

Dr. C. L. Egbert, Hastings, is recovering from a fractured patella received in a recent auto accident.

Dr. and Mrs. T. Y. Dorwart, Lexington, have gone to Europe where the doctor will attend clinics for a time.

Dr. A. P. Fitzsimmons, Tecumseh, was a medical officer at the Democratic National convention in Chicago.

Dr. and Mrs. P. L. Benthack, Chadron, attended the American Institute of Homeopathy at Washington, D. C., in June.

Dr. and Mrs. Lother Egan, Hastings, had as a vacation treat a trip to Havana, Panama and Nicaragua, in June.

Dr. J. L. Smalldon, Pouhkeepsie, N. Y., visited relatives in Omaha. He is a Nebraska University medical graduate.

Dr. Harriet McGraw and husband made a trip to Steamboat Springs, Colorado, and to points in California last month.

Dr. R. L. Hart, Kearney, was a delegate to Rotary International at Seattle in June. His wife and daughters accompanied him.

Dr. D. M. Bloch, Arlington, had the experience of his car overturning in loose gravel without himself suffering serious injuries.

Dr. J. F. Repass, Wytheville, Va., who formerly practiced at Palisade, Nebr., visited points in southwestern Nebraska in June.

A dope fiend visited Lodge Pole, lately and stole a hypodermic outfit from Dr. R. L. Hook, and some gold from an adjoining dental office.

The Evangelical Lutheran Good Samaritan society with headquarters at Fargo has purchased property in Fremont for an old people's home and hospital.

A thief drove away the car of Dr. H. L. Kindred, Meadow Grove, but abandoned it about four miles away. A case of surgical instruments was missing.

Dr. H. E. Potter, Fairbury, who was a delegate to the Republican National Convention, has been named one of the committee to notify President Hoover of his nomination.

Dr. George Salter, a graduate of Harvard and after two years interneship has returned to Norfolk and will be associated with the Salter and Brush clinic as pediatrician.

Valuable rugs were stolen from the Dr. W. F. Eckles home in York, recently, while the family was absent attending exercises of Harvard college from which their son graduated.

Dr. Theodore Bleuchel, formerly of Norfolk and Omaha, was married recently to Miss Angeline Mary Bellavance, Eastondale, Mass. They will reside at Cook County hospital, Chicago.

Dr. and Mrs. C. M. Swab, Omaha, visited relatives at Womelsdorf, Pa., attended the American Ophthalmological society meeting at New London, Conn., and fished in Chesapeake Bay in June.

A joint program of the Madison County Historical society and the Madison Community club, June 27, featured the fiftieth anniversary of the arrival of Dr. F. A. Long, who located in Madison, June 27, 1882.

Dr. and Mrs. Cass. G. Barns, Madison, celebrated their sixtieth wedding anniversary at the home of their son, Dr. Frank Barns, Albion, June 25th. Dr. Barns is a retired physician who has followed newspaper work for some years and recently published "The Sod House." He was at one time surgeon general of the Nebraska National Guard.

BOOKS RECEIVED

THE HEALING CULTS. A Study of Sectarian Medical Practice: Its Extent, Causes and Control, by Louis S. Reed, Ph. D. Price $2.00. University of Chicago Press.

THE COST OF MEDICINES. The Manufacture and Distribution of Drugs and Medicines in the United States and the Services of Pharmacy in Medical Care, by C. Rufus Rorem, Ph. D., C. P. A., and Robert P. Fichelis, B. S., Phar. D. Price $2.50. University of Chicago Press.

NEW AND NONOFFICIAL REMEDIES, 1932, containing descriptions of articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1932. Cloth Price, postpaid, $1.50. Pp. 492. lvi. Chicago: American Medical Association.

The recognition of a preparation for inclusion in this book singles it out from the host of new products of the pharmaceutical manufacturers as being a worthwhile addition to the existing armamentarium of the practicing physician. To be thus distinguished it must be shown, under the impartial scrutiny of the carefully chosen group which is the Council on Pharmacy and Chemistry, that it has acceptable evidence of therapeutic usefulness and that it is marketed in accordance with the honesty and straightforwardness envisaged by the excellent Rules which have been the outgrowth of the Council's quarter century experience in appraising the merits of new drugs.

In accordance with its custom of keeping the annual editions of New and Nonofficial Remedies in the forefront of current medical thought, the Council offers in this volume the newly revised articles: Barbital and Barbital Compounds; Fibrin Ferments and Thromboplastic Substances; Liver and Stomach Preparations; Mercury and Mercury Compounds; and Ovary. Perhaps the most noteworthy new preparations admitted are: nupercaine-Ciba, a local anesthetic; pentobarbital sodium, a barbituric acid derivative; and iopax, a new preparation for roentgenologic use. All of the ovary preparations formerly described are omitted and none of the new standardized preparations are described, although the names Theelin and Theelol are recognized in the revised general article. Another change of importance is the classification of articles formerly listed as "Exempted" under the heading "Accepted but Not Described." There is the usual excellent index and the augmented Index to Proprietaries Not Included in N. N. R.

THE SONNET OF A DISAPPOINTED DOCTOR

Ah, thoughtless patient, whom I long ago did save
From pain and torture with a magic pill,
Who's anguished suffering I did still,
To whom the best within my power I gave;
Why do you let me sit at home and rave?
Why won't you try my cup of happiness to fill,
Which you could do if you would pay your bill?
Must I be doomed to fill a pauper's grave?

When she was ill I worked to save your wife.
I gave your child the best of skillful care.
I offered freely of my time and skill
To make for all of you a healthful life.
Now don't you think 'twould be but fair
If you would come around and pay your bill?

—Tonics and Sedatives.

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CONTENTS

Page
The Use of Pedicled Flaps and Skin Grafts in Reconstructive Surgery of the Head and Neck, Frederick A. Figi, M. D. 361
Cardiac Enlargement, Frederick W. Niehaus, M. D. 365
Diseases of the Thyroid Gland, Byron B. Davis, M. D. 372
Infant Feeding, E. S. Wegner, M. D. 377
Clinical Aspects of Excretion Urography, Arbor D. Munger, B. Sc., M. D., F. A. C. S. 381
Mumps With a Double Complication of Meningitis and Pancreatitis, W. J. Gentry, M. D. 383
The Investigation of Sterility, Harold S. Morgan, M. D. 386
Report of the A. M. A. Session at New Orleans, 1932, Benj. F. Bailey, M. D., Delegate 389
Dr. Herman von Wechlinger Schulte: An Appreciation, Nicholas Michels, Sc. D. 394
Abdominal Actinomycosis, John W. McGee, M. D., and Frederick C. Hill, M. D. 397
Alarming Symptoms Following Maxillary Sinus Medication: Case Report, D. D. Sanderson, M. D. 400
Rupture of the Uterus in the Seventh Month of Pregnancy Through the Scar of Curet Perforation, C. H. Waters, B. Sc., M. D., F. A. C. S. 401

EDITORIAL—

The Debt of Ex-Presidents to Organized Medicine 402
Health Education Activities One Reason for State Fair 402
Electrosurgery 403
Concerning Spinal Anesthesia 403
Post-Graduate Extension Courses 404
Rabies 405
Inactive Duty Training at Mayo Clinic 406
Social Insurance Undermines National Character (Continued) 406
A General Practitioner's Response to the Challenge of Obstetrics 407
Medico-Legal Disabilities—No. 1 408
Dermatologic Hint No. VII 408
Obstetrical and Gynecological Hints. No. VII 408
Editorial Paragraphs 408
Infantile Eczema: Study Based on One Hundred and Sixty Cases 409
Necrology 410
Tuberculosis Abstracts 410
The Societies 411
Human Interest Tales 412

THE USE OF PEDICLED FLAPS AND SKIN GRAFTS IN RECONSTRUCTIVE SURGERY OF THE HEAD AND NECK*

FREDERICK A. FIGI, M. D.,
Section on Laryngology, Oral and Plastic Surgery, The Mayo Clinic,
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In the correction of the various congenital, traumatic and postoperative defects about the face and neck, pedicled flaps and skin grafts must frequently be brought into use. Under certain conditions they may be used interchangeably, but each has its particular field of usefulness and its limitations. The same is true of the various types of skin grafts and flaps from different parts of the body, since not only the functional result but the appearance of the reconstruction as well must be considered.

In general, flaps are useful in the following situations: (1) for repairing losses involving the lips, cheeks, nose or eyelids which require restoration of the lining as well as the external covering; (2) where subcutaneous tissue in addition to skin is desirable; (3) where a considerable quantity of tissue is needed, particularly in an area from which it is impossible entirely to exclude infection, and (4) where the transplanted tissues are to cover exposed bone, cartilage, dense scarring or any surface whose supply of blood is below normal, or which it is impossible to immobilize satisfactorily.

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*Read before the Nebraska sectional meeting of the American College of Surgeons, Omaha, February 24, 1932.

On the other hand, skin grafts find their greatest field of usefulness in restoring losses of the skin where satisfactory sterilization and immobilization are possible and the blood supply is adequate. As a matter of fact, thin grafts of the Ollier-Thiersch type are frequently employed very successfully for restoring loss of lining within infected cavities, such as the mouth and nose. The percentage of takes is not so high in such situations, however, as it is in a field that can be kept clean.

The chief advantage in the use of skin grafts in lieu of pedicled flaps are the saving in time and expense to the patient. Although a Wolfe graft might be utilized in covering a denuded area on the face, the entire procedure being completed in one operation and requiring approximately three weeks, turning in a flap for the same purpose would necessitate several operations and take at least six weeks. A much longer period of hospitalization with additional expense would also be entailed. If the flap is taken from the forehead in such a case, additional scarring on an exposed portion of the body would likewise be produced.

One of the chief disadvantages in the use of skin grafts about the face and neck is the possibility of pigmentation. This is an important consideration, as an otherwise ideal result may be spoiled by the development of brownish pigmentation of varying degree in the graft. The cause of this is not known, but once it develops it is persistent and often permanent. Such pigmentation rarely develops in pedunculated flaps, although the change has been noted in negroes.

For reconstruction about the face, flaps may be secured from the forehead, the cheek, the scalp, the upper or lower lip, the neck, thorax, abdomen or arm. The area from which a flap can most advantageously be obtained in a given case must be determined by the site of the defect to be repaired. Flaps from the scalp may be utilized in repairing defects of the bearded portion of the face of men, but except for bald persons would not be useful elsewhere on account of the difficulty of getting rid of the hair.

Flaps from the forehead are extremely useful for the repair of defects of any portion of the face, of either men or women. The color and texture of the skin is satisfactory and the rich blood supply of the frontal region renders it possible to transfer such flaps in a minimal period of time. They are especially useful for reconstruction of the nose, and in rebuilding the upper lip. Their outstanding disadvantage is that common to all facial flaps, namely, the production of increased scarring on an exposed portion of the body. This is not so serious for a woman as for a man, since women can effectively conceal the resultant scar by the manner of dressing the hair. (Fig. 1).

Flaps from the cheeks are useful in repairing small defects involving the lower portion of the nose, particularly the alae and tip. The scar following the use of such a flap can be placed in the labiobuccal fold and thereby rendered quite inconspicuous. The use of such flaps for this purpose offers the possibility of a distinct saving in time over flaps from the forehead.

Flaps to be used in the repair of lost portions of the mouth or nose require an epithelial lining as well as an external covering of skin. Otherwise they tend to pucker up into a shapeless knob. This lining may be supplied by turning in a second smaller flap from immediately adjacent to the defect and apposing its raw under surface to that of the original flap. The distal portion of the flap may be folded on itself to serve the purpose, or a skin graft may be used. A full-thickness skin graft best serves the purpose. The graft must be applied at least two weeks prior to transferring the flap to insure its being firmly adherent and in condition to resist the infection inside the mouth or nose. (Fig. 2).

Flaps from the upper lip may be used in rebuilding either the nasal columella or the lower lip. For the former the resultant scar is in the median line of the lip, yet it becomes quite inconspicuous. Following the latter it is situated in the fold between the upper lip and cheek. Wedge-shaped flaps from the lower lip may be used in repairing defects in the upper lip. They are especially useful in restoring fullness to the upper lip in cases of harelip where there has been considerable loss of tissue.

Flaps from the neck find their greatest field of usefulness in reconstruction of the auricle. Such flaps in the past have been used for facial reconstruction, but they are quite unsatisfactory for the purpose because of the small amount of subcutaneous adipose tissue and the impossibility of placing the scar where it will not be conspicuous.

Flaps from the thorax to be used in reconstruction about the face and neck are as a rule best tubed and delayed for a time prior to transfer. In men such flaps are best obtained from the front of the thorax, as a rule preferably in the median line, unless an unusually long flap is desired; it is then laid out from a point just below the clavicle, extending obliquely downward and posterior to a point on the lateral or posterolateral aspect of the thorax. In woman, these flaps may best be secured from the back. Abdominal flaps possess no particular virtue over those from the thorax, unless there is already so much scarring of the thoracic surface as to preclude its use for purposes of reconstruction. In addition, abdominal flaps must be caterpillared at least once or twice before one end can be made to reach the face, which requires at least several weeks longer. Although an almost unlimited amount of tissue is available by the use of tubed flaps from the thorax, the color and texture of the skin may render reconstructions about the face quite conspicuous. However, in the course of time these differences become much less noticeable. The additional scarring on a visible portion of the body that follows the use of forehead flaps is, of course, avoided, but they require much longer time for transference.

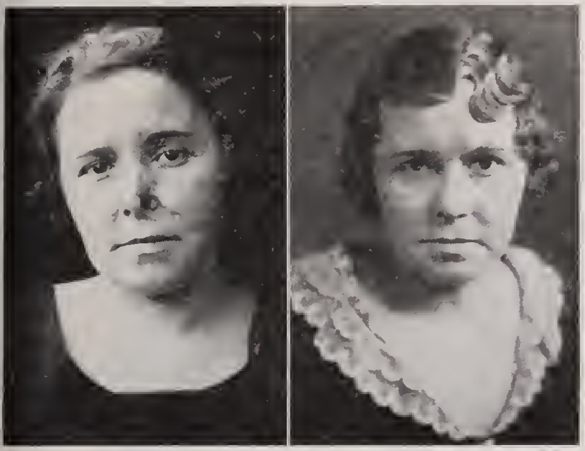

Fig. 1a. Fig. 1b.

Fig. 1a, Postoperative defect of left side of nose following removal of epithelioma; b, result following repair of operative defect by means of forehead flap lined with Wolfe graft.

Flaps from the deltoid region have been used a great deal by some plastic surgeons for the correction of scarring and deformities about the front of the neck and lower portion of the face. In some instances they possess distinct advantages, but the use of full thickness skin grafts or of flaps from the thorax will, as a rule, meet the same purpose without the necessity of keeping the patient in a cast for the required period of two to three weeks. Flaps from the inner surface of the upper part of the arm are coming into more general use for the repair of defects of the nose, especially for relining crumpled syphilitic noses. For the latter purpose the flap is introduced into the nose through an incision along the lateral fold and below the vestibule, or through the labial sulcus underneath the upper lip. This procedure necessitates holding the arm up over the top of the head by means of a plaster cast for at least two weeks.

One can scarcely enter into a consideration of the use of pedicled flaps about the head and neck without at the same time considering skin grafts. The use of flaps in the repair of facial defects almost invariably necessitates skin grafting at some stage, either for furnishing a lining for the flap or for covering the area from which the flap is taken.

The types of skin graft most useful about the face and neck are the Ollier-Thiersch and the Wolfe-Krause or full-thickness. A third group has come into use in recent years, the so-called split full-thickness grafts. These are in reality thin, full-thickness grafts. Reverdin or pinch grafts are rarely desirable for covering exposed portions of the body, since the area to which they are applied remains unduly conspicuous and unsightly. Full-thickness grafts are most useful in these areas in spite of the fact that the technic of their use is much more exacting than that of the thinner grafts. As a rule, their color is more satisfactory than that of the thinner grafts and they may contract much less. They also have more body and are more resistant to trauma.

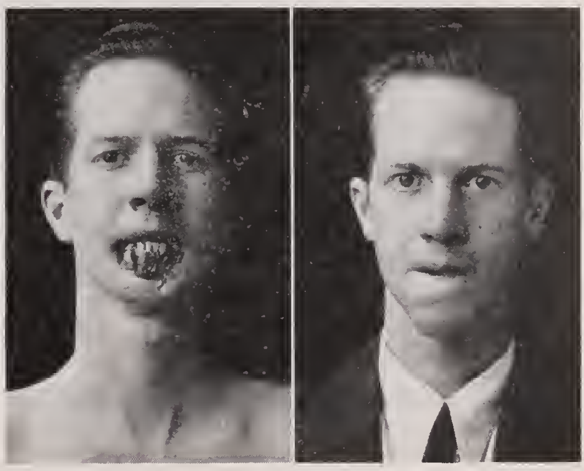

Fig. 2a. Fig. 2b.

Fig. 2a, Defect of lower lip and chin following removal of recurring epithelioma; b, result following reconstruction with lined flap from the thorax.

Full-thickness grafts are used for covering wounds about the face following the removal of various types of nevi or of other benign lesions, low-grade epitheliomas, areas of actinodermatitis, lupus or extensive scars, particularly those due to burns. As I have mentioned, they are also used to cover the denuded area on the forehead following the removal of a pedicled flap and for lining the under surface of such flaps. On the neck, grafts of this type are used chiefly in replacing scars due to burns. (Fig. 3).

Thiersch grafts have been used a great deal for the correction of ectropion of the eyelids. Because of their tendency to contract, and their unsatisfactory color, however, they are being supplanted to a great extent by the thicker types of graft They are most useful in relining stenosed nostrils and in restoring the buccal sulcus within the mouth in cases in which this has been destroyed in the removal of a malignant growth. At times I have secured satisfactory takes with full-thickness grafts in these situations, but the chance of a take is much better when Thiersch grafts are used. Grafts of this type have also been utilized in relining the larynx and trachea following the removal of a stenosing cicatrix.

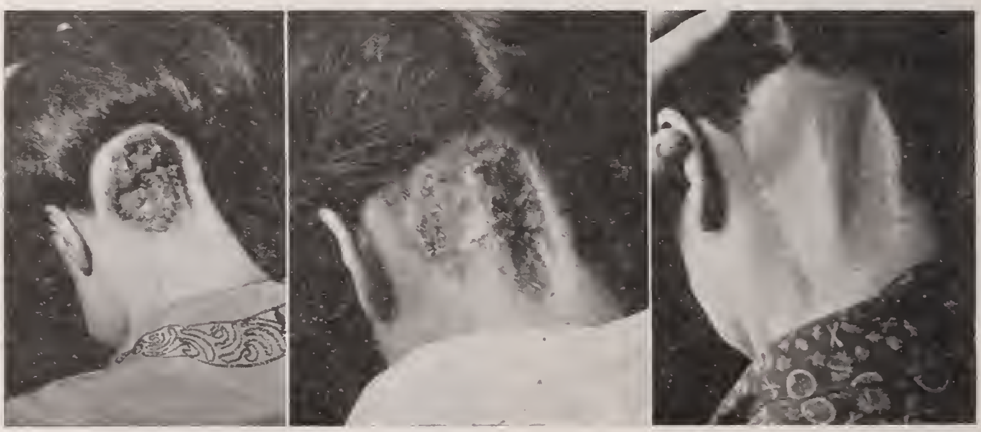

Fig. 3a. Fig. 3b. Fig. 3c.

Fig. 3a. Recurring epithelioma of posterior scalp and cervical region; b, thin, tense scar following cautery excision of epithelioma, and c, full-thickness skin graft replacing postoperative scar.

The technic of placing full-thickness skin grafts is exacting and necessitates paying the utmost attention to details if one is to secure good results. The grafts may be obtained from almost any portion of the body, but are usually best taken from the inner surface of the upper part of the arm. Small grafts for use about the face may be secured from the neck or region of the mastoid, since the color and texture are more satisfactory. Thin grafts for use about the eyelids may be taken from the lid of the opposite side. The skin from the inner aspect of the upper arm is sufficiently thin to be useful for most purposes and can, as a rule, be secured in ample amounts. The graft is cut the exact size and shape of the area to be grafted according to a pattern of thin sheet lead. If the area is irregular one must be careful to keep the pattern right side up, otherwise the graft will not fit. With a sharp scalpel the graft is dissected off, entirely devoid of subcutaneous fat. Care is taken to avoid pinching the margins of the graft with forceps. It is better handled with sharp hooks. The margins of the wound on the arm are undercut and approximated primarily. All bleeding in the wound to which the graft is to be applied is carefully controlled, a minimal amount of ligature being used. Either very fine catgut or fine silk is used for ligating bleeding points. The graft is then applied to the dry bed and accurately sutured in place by means of silk. Should any blood collect beneath it while the sutures are being placed, this must be carefully expressed, otherwise it will separate the graft from its source of nourishment and necrosis will occur. A firm pressure dressing is applied in order to immobilize the graft on its bed, and at the same time maintain firm contact between the raw surfaces. The dressing must be continued for approximately ten days. If removed too soon blebs will develop over the surface of the graft and these will invariably become infected, resulting in some loss of tissue and in unsightly scarring. For pressure a firmly folded gauze pad, moistened sea sponge or dental compound may be used. I prefer the gauze, since this is always at hand. It is essential that as nearly perfect asepsis as possible be maintained throughout. With close attention to these details satisfactory takes should be obtained in approximately 90 per cent of cases. Failures can usually be ascribed definitely to lack of sufficient attention to one of the details mentioned. In case of failure one can either allow the wound to heal completely and later apply another graft to correct the scarring and contracture, or dichloramin-T dressings may be used for a few days to clear up any infection present, then the granulations are removed and another graft is applied.

Grafts of this type for lining the under surface of pedicled flaps invariably do well. Barring infection, I had never seen one fail to take perfectly. As previously mentioned such a graft is, as a rule, inserted at the time the flap is first elevated, so that by the time the flap is ready to be transferred the graft is firmly adherent. A second graft is often inserted directly beneath the first at the same time, in order to cover the area that would otherwise be left denuded when the flap is transferred.

CARDIAC ENLARGEMENT*

FREDERICK W. NIEHAUS, M. D.,

PATHOLOGY, PHYSIOLOGY AND ANATOMY

Cardiac enlargement always indicates cardiac disease. Conversely, no organic heart disease can be present without enlargement of, at least, some part of the heart, with the exception of some uncomplicated cases of coronary sclerosis and angina pectoris. F. M. Smith states that "Size of the heart is perhaps the most important feature in determining whether or not an organic disease is present." Likewise Eyster concludes that "Cardiac hypertrophy does not occur in the absence of cardio vascular disease."

The recent attention of cardiologists has been largely directed to the functional tests. While these have some field of usefulness, they are often disappointing. Frequently patients with rapid heart rates make a very poor showing by these tests. The cardiac and circulatory efficiency must, at least, be fair, as in many instances they carry on their occupation without symptoms suggesting cardiac inefficiency. As expressed by Crummer, "The cardiac reserve power must still be made on the basis of the personal judgment of the physician."

With the present interest chiefly directed to the physiological aspects of the circulation, it seems apropos to give some attention to the cardiovascular lesions.

In determining the presence or absence of cardiac enlargement, cognizance of the fact must be taken that there is a fairly definite relation of the size of the heart to the body weight, especially the muscular weight. In males the average heart weight is 0.45% of the body weight, in females 0.40%. This supposedly is fairly constant in all body types. Some authors claim an increase with age, others deny it. The amount of muscular exercise apparently does not modify this relationship. The size of the heart is approximately the size of the clinched right fist. Hypertrophy constitutes a disproportion between the body weight and the heart size.

Cardiac strain always precedes cardiac dilatation, and occurs either by a normal ventricle working against increased resistance, or by an impairment of the contractile function of the ventricle working against normal pressure. In either event the systolic discharge is decreased. The diastolic volume is increased, resulting in a rise of the initial tension. With this the myocardial fibers are stretched, lengthened, and become more irritable. The contraction is more forceful with the result that the systolic volume is again augmented. As expressed by Wiggers, "A tired heart must dilate to do the same work as a normal heart." The diastolic blood pressure is raised. This is always an indication of cardiac strain.

Cardiac tonus is also a factor in cardiac dilatation. This term is not well defined, and it is also very loosely used. It has been defined as, "The fitness of muscle fibers." Its measure being the energy set free per unit length of muscle fiber at each contraction. Tonus is also expressed as a partial, but sustained muscular contraction. Moritz, on the basis of tonus, differentiates dilatation into tonegenic and myogenic types. In the tonegenic or the physiological dilatation, there is no primary myocardial injury. The muscle is working against increased resistance. The tonus is normal, as is also the systolic volume. Elongation of the heart precedes and exceeds widening. The apex cavity is slender.

In the myogenic or the pathological dilatation there is a primary myocardial injury due to infarction, degeneration, or infection. There is a failure of cardiac tonus. The systolic discharge is decreased. The heart is widened rather than elongated. The apex cavity is broad and obtuse.

Dilatation begins when tonus diminishes. Cardiac insufficiency occurs when "lowered tonus accommodates more fluid without increasing the initial tension, and the conditions are not present for a stronger beat to expel the blood."—Wiggers. When the heart does not expel as much blood as it receives, insufficiency begins. The earliest effects of this, producing clinical symptoms, are a reduction of capillary flow as demanded by exercise. This gives rise to muscular weakness and fatigue. In the pulmonary circuit this enlargement of the capillaries encroaches on the alveolar spaces and diminishes their air content and the vital capacity.

Pratt states that, "acute dilatation has never been observed clinically if a heart is healthy, and rarely, but may occur if the myocardium is diseased." Rapid dilatation may cause pain radiating to the shoulder, and a sense of weight or oppression over the heart. The apex beat is diffuse and feeble. There are soft murmurs and enlarged veins of the neck. An anoxemia, like in angina pectoris, probably produces these symptoms.

Hypertrophy results if the cause of dilatation persists. The actual cause or mechanism of hypertrophy is not definitely established. The work imposed by various cardiac lesions and conditions, as the sole cause, is usually not accepted at present. Eyster found no cardiac hypertrophy in dogs subjected to treadmill experiments. Pratt states, "that intake and output in violent physical exercise is much larger than with any valve lesion." Over active hearts, as seen in hyperthyroidism and neuro-circulatory asthenia, are not enlarged. Wiggers states that, "increased work per minute unassociated with increased work per beat does not cause hypertrophy, but when the work of the heart is permanently increased, and is working nearer its reserve power, the muscle fibers are so effected that they hypertrophy."

Many authors, including Eyster and Wiggers, believe that an injury to the myocardial. fibers by dilatation from added strain, necessarily, precedes hypertrophy and is the essential factor rather than the added work. This is difficult to determine, as in all cases of hypertrophy there is some evidence of myocardial injury, and also evidence of increased work.

One source of injury, usually not considered, is the effect of dilatation and hypertrophy on the coronary circulation. The coronary tension is decreased by dilatation, or by passive congestion of the heart itself. Some valve lesions, as aortic regurgitation, due to decreased diastolic pressure, are not conducive to a good flow of blood through the coronary vessels.

Koster suggests that weak heart action never so completely squeezes the blood out of the heart wall during systole and diastole, as a normally contracting heart. As a consequence of this increased blood in the myocardium, hypertrophy results from over nutrition. Physiologists do not agree that hypertrophy results from an increased blood supply alone.

Karsner made the observation that in the normal heart there is a great variation in the size of the myocardial fibers and that with hypertrophy the fibers are more uniformly large, and that when all have attained a maximum size, further hypertrophy is impossible. This may also represent the functional strength.

The amount of fibrous tissue in the myocardium is never sufficient to appreciably increase the size of the heart. In fact, there is no relationship between fibrosis and cardiac hypertrophy. Fibrosis, most frequently has some relation to the coronary vessels, usually penetrating from the deepest layers of the endocardium and the pericardium, along the vessels into the myocardium. Some lesions apparently are isolated from the vessels.

True inflammatory lesions, characterized by exudation and proliferation, are seldom seen except in acute rheumatic, and in acute or subacute bacterial endocarditis. It is only these lesions, to which the term myocarditis can correctly be applied.

Chronic valvular lesions in a high percentage of cases (55% Clawson) shows periarterial scars, but never extensive enough to appear to be a factor in cardiac failure. Coronary sclerosis is slight or absent and is not a factor in the production of the fibrosis in this lesion. It must be a result of ancient, completely healed, inflammatory insults, as exudation and proliferation are lacking.

In hypertension and coronary disease there is practically never evidence of inflammation. The greatest amount of fibrosis is found in sclerosis or occlusion of coronary arteries. The amount depending on the size or the number of the involved vessels. At times these areas are surprisingly large. These may in time dilate, forming the so-called aneurysm of the heart. Fibrosis is present in about 50% of cases of hypertensive hearts, and in coronary sclerosis it is present in 85% of cases (Clawson). In cases dying of coronary disease, there was no difference in the amount of fibrosis between the cases having high or low blood pressure.

Scars replacing the myocardium are seldom seen except in hypertension and coronary disease. Besides fibrosis dependent on vascular change, Albrecht contends that continued stretching of the muscle fibers results in cell injury, degeneration (fat-splitting, hyaline changes, absence of striations, step like arrangement of striation) and fibrosis.

Fibrosis rarely appears sufficiently extensive to cause cardiac failure. The latter must be due to an added factor—fatigue. Hypertrophic hearts are frequently competent for years. But the fact cannot be denied that it always means a cardiac defect, that the heart is handicapped, and that the reserve of such a heart is always less than normal. A hypertrophic myocardium exerts effort which previously was extraordinary, now is average. No compensation restores the circulation to its original condition, especially with mitral lesions. There is always an over-filling of the vessels of the lung and compensation is never completely reestablished. The various degenerative myocardial changes are rather complications of hypertrophy than a part of it.

Causes of hypertrophy:

(a) Intrinsic.

(1) Valve defects. (2) Coronary artery disease. (3) Adherent pericardium.

(b) Extrinsic.

(1) Hypertension. (2) Thyrotoxicosis. (3) Severe anemia.

The degree of hypertrophy is, to a certain extent, determined by the demands of body exertion. With the same primary cause a man at heavy manual labor would have more hypertrophy than would occur in an inactive cripple. Hypertrophy and enlargement at the autpsy table, representing the terminal stages, frequently involves the whole heart. In the earlier stages, with compensation, these changes are limited to the chamber which is subjected to strain. Schmidt says, "that with changes in the heart volume incident to valvular insufficiency, lung emphysema, etc., the internal dimensions of the heart are changed in a typical way."

Kirch states, "that hypertrophy dependent on cause produces characteristic changes in the shape aside from thickening of wall, which can be diagnosed." He further stresses the fact that dilatation and hypertrophy always begin at the path of exit of the blood (ausfluss bahn) from the heart and progresses backward against the current of blood, and only late in the course of the disease is the path of entrance (einfluss bahn) involved. Normally the aortic ostium lies only slightly above the mitral ostium. With dilatation the former is pushed up, due to an elongation of the anterior part of the septum and the anterior part of the left ventricle wall. A similar elongation of the conus pulmonis occurs in right hypertrophy. Dilatation and hypertrophy, regardless of the cause, follow each other in a like manner on both sides of the heart.

CARDIAC ROENTGENOLOGY

Whenever the efficiency of the heart as a pump is decreased, that part of the heart on which the burden is thrown first dilates, and if compensation is restored, it hypertrophies. This reaction of the affected part of the heart gives a fairly characteristic change in the size and the shape of that part. This is especially true of valve lesions, but it is also present to a lesser degree in myocardial or pericardial disease.

A certain heart shape may in itself establish a cardiac diagnosis, especially of a valvular lesion. At least, it may furnish evidence which, together with other findings, permits a diagnosis. In an atypical case, such as is not rare in mitral stenosis, the shape of the heart and its individual parts may furnish the only evidence on which to base a diagnosis. The use of the heart shapes in cardiac diagnosis presupposes a thorough understanding of heart dynamics and normal anatomy.

For the sake of clarity the discussion will be limited to cardiac roentgenology. However, some of the features apparent by this method can be accurately demonstrated by percussion. It must also be conceded, that not all findings are possible with the x-ray in every case.

Radiograms have occasionally been employed for cardiac examinations since the early development of this speciality. Examinations at the present time are made by two methods: (1) the teleradiogram, which is a picture taken with the tube at two meters from the chest. This reproduces the actual size of the heart. The advantage of this method is that a permanent record is made which can be studied at any time. (2) The orthodiagram, which is a drawing of the heart made with the patient under the fluoroscopic screen, permits prolonged observation of the various parts of the heart in various positions, and also permits the observation of the effect of the diaphragmatic movements on the heart. Obviously, the personal equation is a potent factor in this procedure. Therefore, to obtain reliable data the observer must be both a competent radiologist and a cardiologist. First, various types of chests have various positions of the heart within them. It is necessary to consider the narrow and the squat types of chest, the influence of inspiration and expiration, the erect and the dorsal positions, the relation of the weight and the size of the body, sex and chest deformity.

The borderlands of the normal and the pathological overlap more in cardiac roentgenology than in any other field. Normal heart shapes usually approach three types; the oblique, the horizontal and the vertical. The most practical relationship is the ratio between the total width of the heart and the width of the thorax. The average normal heart does not exceed 55% of the internal thoracic width.

In order to properly interpret changes in the size and the shape of the heart, the normal position of the heart chambers and the location of the great vessels entering and leaving the heart must be fully understood. In the anterior posterior view (Fig. I), the left border is formed from above downward by the aortic knob, the pulmonary artery, the auricular appendage and the left ventricle. The auricular appendage is usually not apparent and an incisura is formed at the junction of the pulmonary artery and the left ventricle, called the heart waist or "taille." The upper part of the right border is formed by the superior vena cava. The aorta does not extend to the right border unless enlarged. The lower part is formed by the right auricle.

The right anterior oblique position (Fig. II), is observed with the right side of the chest toward the fluoroscopic screen at an angle of about 50 degrees. This view permits observation of the right and the left auricle and the ascending aortic arch.

The left anterior oblique position (Fig. III) is observed by having the left side of the thorax toward the screen at the same angle as for the right position. The apex is then pointing directly at the observer. Both ventricles and the whole arch of the aorta are especially brought to view. The pulmonary artery and the left auricle are also visible. This is a very important position. O'Kane has recently suggested that the width in this position is more important than in the anterior posterior position. Kohler also believes that slight enlargement is best seen in this position.

The heart increases in size with inspiration and decreases with expiration. Some advise making measurements with deep inspiration. Most authors prefer the midposition without exaggerated breathing. With deep inspiration the normal apex is elevated upward, away from the diaphragm.

The normal left ventricle contour has a parabolic form. A hyperbolic curve of the ventricle is seen when dilatation predominates. This is the form usually seen in extreme cardiac decompensation and in coronary thrombosis. The elliptical form is present when hypertrophy predominates. There is a marked curving of the arch of the left ventricle, greater plumpness of cardiac apex, a distinct break between the auricle and the ventricle and strong heart action. This is the form usually seen in the valvular lesions, such as compensated aortic insufficiency or mitral insufficiency.

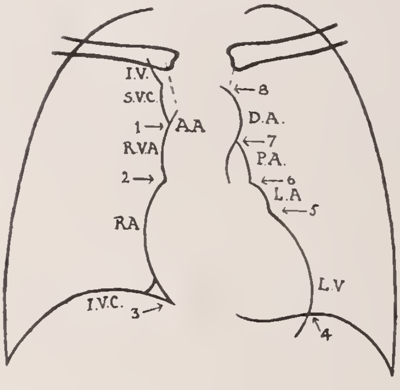

Fig. I

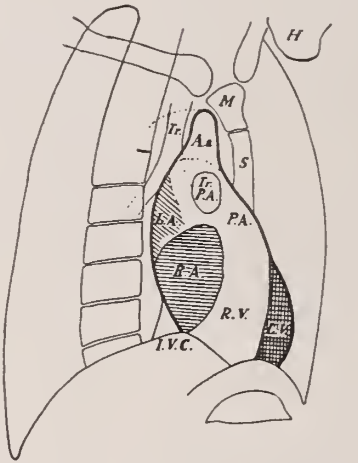

Fig. II

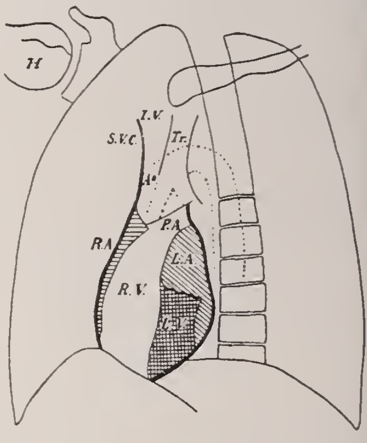

Fig. III

Fig. I. Normal anterior posterior view of the heart. (Kohler). 1-8 indicate notches between various arches. RA, right auricle; RVA, right vascular arch; AA, Ascending aorta; LV, left ventricle; DA, descending aorta; IV, innominate vein; SVC, superior vena cava; IVC, inferior vena cava.
Fig. II. Diagram of normal heart in right oblique position. (Steele).
Fig. III. Diagram of normal heart in left oblique position. (Steele).

Mitral stenosis: (Fig. IV) Early in this lesion, there is an altered form of the heart shadow rather than an increase in the heart measurement. The middle arch of the left border may become prominent due to the dilatation of the left auricular appendage. In the left oblique position the left auricle may also be enlarged and show systolic pulsation. When the disease progresses with increased pressure in the lesser circulation, the right heart dilates. The right ventricle enlarges and may extend beyond the left border of the heart. With this there is considerable dilatation of the pulmonary artery so that finally the silhouette of a well developed mitral stenosis is erect, long and narrow, or even ovoid. The left border tends to become straight. The incisura is filled with the pulmonary artery and the left auricular appendage and, if present, it is lowered. The aortic shadow is small and may be almost hidden by the spine. The right auricular shadow is elevated and joins the superior vena cava at a higher plane than usual, or the dilated left auricle may become definitely visible on the right border of the heart. In the left anterior oblique position the left atrium encroaches on the retrocardiac space, the esophagus is displaced to the left and the angle of bifurcation in the trachea is increased.

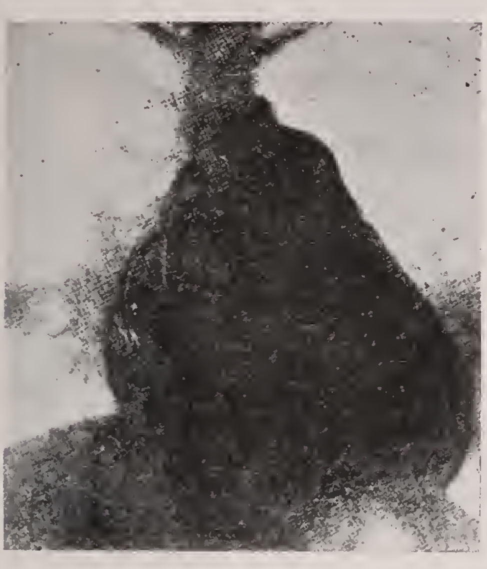
Fig. IV. Mitral stenosis (Schwarz). Showing extreme enlargement of pulmonary artery and left auricle presenting on right side of heart.

Mitral regurgitation is a singular condition in that the diseased orifice may remain for years, small enough not to allow regurgitation of a significant amount of blood, and to remain large enough to permit passage of sufficient blood for an adequate circulation. When the orifice is large enough to permit a large part of the systolic output to be regurgitated it becomes necessary for the auricle to sustain the systolic pressure. Under these conditions cardiac decompensation occurs and mitral regurgitation becomes, on account of the dynamics, the most grave of all cardiac valvular lesions.

Mitral insufficiency: (Fig. V) The heart contour is somewhat similar to that of mitral stenosis with the exception that there is a marked increase of the left median distance, so that the left border of the heart is much longer and more slanting. Enlargement of the left auricular appendage early replaces the incisura. It is, however, partially restored by a dilated and hypertrophied ventricle. In advanced cases the incisura may be replaced by an outward convex shadow referred to the dilated pulmonary artery. The transverse diameter may approach or exceed the longitudinal shadow. Another characteristic finding is that the basal curve is more marked than the apical. Even with compensated lesions there is considerable pressure in the lesser circulation. In both types of mitral disease the hilus shadows are increased and may at times be seen to pulsate.

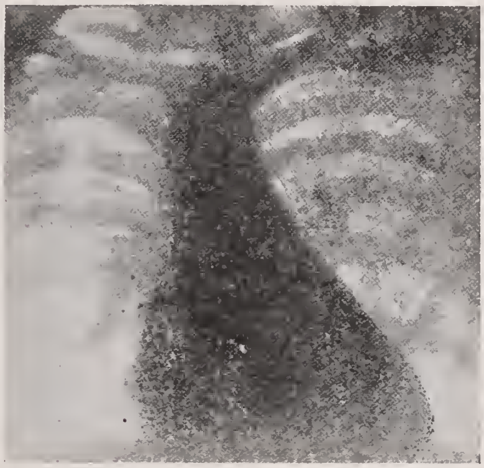
Fig. V. Mitral insufficiency. (Schwarz).

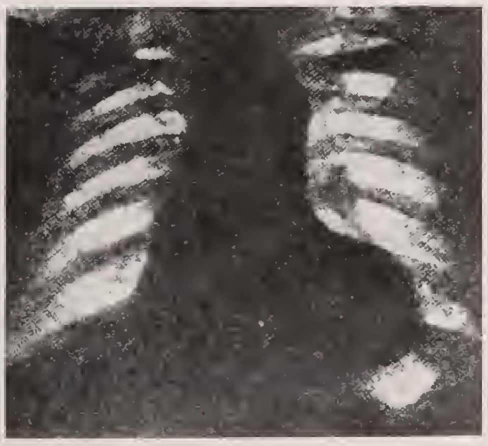
Fig. VI. Aortic insufficiency. (Schwarz).

Aortic regurgitation: (Fig. VI) In this condition the pressure of the greater circulation is supported by the wall of the left ventricle. Until decompensated there is no burden on other chambers of the heart. Therefore, there is a marked increase in the left median distance; the left lower arch of the heart is rounded; the cardiac shadow is horizontal with the left border raised from the diaphragm. There is a marked enlargement of the aorta, so that the aortic knob is markedly prominent and the ascending aorta extends to the right of the superior vena cava. The esophagus is displaced to the right. The great vessels appear to ride on the horizontal portion. The shape has been termed "duck" or "shoe shaped".

Right ventricle enlargement and chronic pulmonary emphysema: Right sided dilatation and hypertrophy occurs with an increased tension in the pulmonary circuit. This is called the cor pulmone. This is seen in the rare cases of sclerosis of the pulmonary vessels, emphysema, pleural adhesions, deformed chests, inflammatory process in the lung. The right auricle extends to the right beyond the normal limits. The notch formed at the junction with the vena cava is pushed upwards. As the transverse diameter is increased, the apex is pushed upward and outward and the right ventricle may form part of the left cardiac border. The pulmonic arch is very conspicuous and the hilus shadows are accentuated and may pulsate. This gives the appearance of a wooden shoe, called by the French "coeur in sabot."

Coronary thrombosis: This presents the typical picture of an atonic heart or myogenic dilatation. The heart rests on the diaphragm like a formless lump of dough. The heart muscle has lost its tone and is no longer able to resist the elevation of the diaphragm, and flattens with expiration. This is called he "sign of expiratory flattening." A broad, plump, slightly differentiated heart resting broadly on the diaphragm indicates generalized dilatation. Usually, with this, there is congestive heart failure from relative insufficiencies, which have their influence on the cardiac size and form.

Hypertension: The heart in hypertension presents the picture of tonegenic dilatation. The left medial and the horizontal diameters are increased. The junction between the left auricular appendage and the left ventricle is sharply defined. The form is more elliptical giving an obliquely placed silhouette.

Heart in goitre: The superior vena cava is broad, the pulmonary arch is long and the aorta is higher than normal. Rosler observed that the systole is quicker than that of a normal heart beating at the same rate. These heart changes may be of some value in diagnosis, as fibrillation may occur in the elderly and the middle aged from goitre, without the classical symptoms of thyrotoxicosis.

Adhesive pericarditis: In concretia cordis (Fig. VII) (Constrictive type of adhesive pericarditis) the heart is walled in by a shrinking callous tissue, also called the armored heart. This is characterized by rigidity of form with very small or nearly absent cardiac pulsations. A diaphragmatic apical tug is frequently seen. The mediastinum shifts in the lateral positions and the diaphragm is movable, but may lag at its medial portions. The shifting of the apex with the change in position is decreased or absent. In acretia cordis (Fig. VIII) (large type of adhesive pericarditis) adhesions bind the heart to the anterior chest wall. The heart shadow is immobile and rigid. The mediastinum does not move in

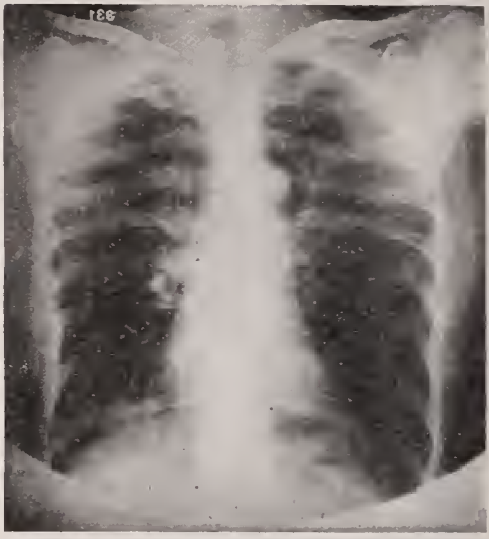

Fig. VII. Concretia cordis (Constructive type of adhesive pericarditis).

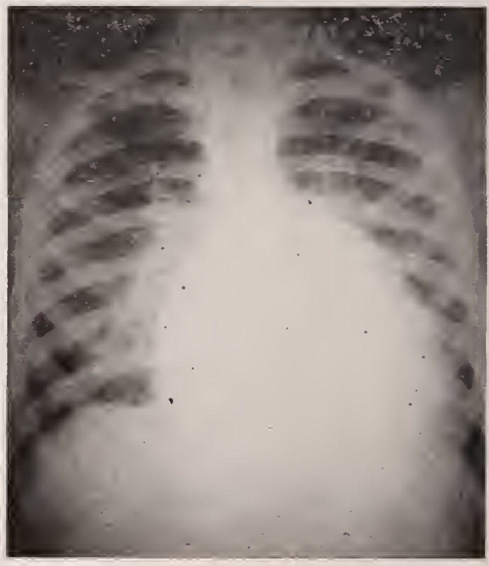

Fig. VIII. Acretia Cordia (Large type of adhesive pericarditis).

the lateral positions with respiration. Systolic contraction is hindered. The apex does not move downward with inspiration. but may even move upward due to the elevation by the chest wall.

A dilated heart may be displaced to the right (so-called centrally situated). The right and the left auricles are both dilated. The latter is crowded for space and presses against the spine and rotates the heart. This occurs most frequently in mitral stenosis.

Aortitis: Measurement of the aorta is difficult as it cannot be separated from the other vessels. It can best be seen in the left oblique position, when the open space within the arch is visible. This is called the aortic window. In the anterior view the supra cardiac shadow can be measured. Normally this does not exceed 6 cm.

SUMMARY:

1. The size of the heart is a very important feature of a cardiac examination.

2. Cardiac roentgenology frequently permits a better determination of size and shape of heart than percussion.

3. The various parts of the heart should be considered separately.

4. Cardiac defects cause a component part to be subjected to an added burden. This results in a characteristic change of the shape and the size of the heart.

5. These changes are important early, in diagnosis, and later in determining the progress of a heart disease.

(Note: Bibliography will appear in reprints.)

DISCUSSION

H. B. HUNT, M. D., (Omaha): I am sure we are indebted to Dr. Niehaus for his brief and comprehensive review of this subject, recalling before us a simple, direct method of observing the heart, the interpretation of which rests upon an understanding of the normal topographic anatomy and normal function of the heart. It makes possible the detection of pathological changes affecting the size of the various chambers and gross physiological changes affecting the rate, rhythm, and vigor of the cardiac pulsation.

Dr. Niehaus has mentioned two methods of projection to show the exact size of the heart: (1) a radiograph of the chest made from a distance of six feet; and (2) a tracing mapped out by passing the central beam from a fluoroscope about the borders of the heart. In case the radiograph is made from a distance of five feet instead of six feet, the alteration in the cardiothoracic coefficient is barely appreciable, being not over 2 or 3 per cent. A more significant distortion is introduced in case an A. P. projection is made in place of the usual P. A. projection. When comparative measurements of cardiac size are made, it is important that a standard position and distance be adopted; ordinarily this is a posteronanterior projection at six feet. More recently some workers have advocated a left oblique posteroanterior projection since the anteriorly placed right ventricle as well as the posterolaterally placed left ventricle are thrown into profile, thereby visualizing right ventricular enlargements which are not routinely demonstrated with the straight posteroanterior projection.

Another study of great value in the demonstration of the various chambers is the visualization of the esophagus by the ingestion of barium. It lies in close relation to the left auricle and in the lateral or left oblique positions is displaced posteriorly by enlargement of the left auricle, as in mitral stenosis. It is also of value in determining the width of the aorta and in the demonstration of aneurysms.

Cardiac coefficients must be interpreted with regard to the habitus of the patient. A Danzer ratio of .50 may be normal for a hypersthenic individual or represent gross cardiac enlargement in the asthenic individual. While there is no sharp boundary line between the normal and the hypertrophied heart, this does not detract from the value of alterations in the ratio of an individual case which may indicate progressive enlargement or retraction. In general, we consider a Danzer ratio above .55 as being indicative of definite enlargement, in patients of any variety of normal habitus.

Fluoroscopic examination of the heart is more illuminating than examination of the radiographic findings since it allows you to turn the patient through all positions thereby visualizing the size and characteristics of pulsation of the various chambers. Furthermore, fluoroscopy is a relatively inexpensive procedure.

H. J. LEHNHOFF, M. D., (Lincoln): I realize the importance of the x-ray in determining the size of the heart. In many cases it is the only way of determining enlargement of the heart, particularly in determining the enlargement of certain areas. I am sure, however, that Dr. Niehaus would not want to give the impression from his paper we should resort to x-ray alone in determining enlargement of the heart. We can not do that with all cases. They can not stand the price in many cases. In hospital cases it is easy to take the patients to the x-ray room, and the patients do not pay for the investigations.

The first statement made, as Dr. Niehaus said, is a sweeping statement; but I believe it is absolutely true that there is no sign in regard to heart conditions as important as finding an enlarged heart. There are few conditions outside of heart disease that produce an enlarged heart. One is primary anemia. On the other hand, there are few heart conditions of great importance that do not show enlargement of the heart. If you will review your cases, you will recall those that showed decompensation without enlargement are few. Bear that in mind when you go home, or recall them now, and see how many cases of decompensation you have had that did not show enalrgement.

One of these cases in which it is difficult to determine enlargement without the use of the x-ray is mitral stenosis. It is hard to pick out enlargements of the left auricle until the heart has progressed to a marked degree of decompensation. Often the heart will show enlargement.

I feel that first statement which Dr. Niehaus made that it is the most important finding we have. Many times we have a case sitting before us that came for a complete examination. We want to know whether or not it has any difficulty as regards circulation. Many of those cases will have murmurs. We want discount murmurs to a certain extent if there are no other findings. We must be careful what we tell that patient. If we find an enlarged heart, we know that there is pathology. If there is a murmur and enlargement it is more important. It is an exceedingly important finding in searching for cardiac pathology.

One of the greatest lessons we can learn from the enlarged heart we learn from the statements of life insurance companies. I do not have the figures with me, but the mortality rate markedly increases in hearts showing moderate hypertrophy, and it increases markedly with more hypertrophy. Cases of pronounced hypertrophy, are not insurable. I do not think there is any condition that causes a more rapid rise in mortality rates than that related to enlarged hearts.

DR. NIEHAUS, (closing): I wish to thank the gentlemen for their discussion. Doctor Lehnhoff emphasized my attitude on the significance of cardiac enlargement and the place of cardiac roentgenology. My first incentive for studying this subject was that chest configuration, emphysema, obesity, etc., frequently preclude determination of size by percussion. The x-ray examination as a diagnostic aid has its greatest value in borderline and in early cases. We are all aware of the importance of the early recognition of a cardiac, and what is still more important, that we do not label a neurotic, a cardiac. If a periodic health examination will ever approach the value attributed to it, every diagnostic aid, such as this, would be advantageous. There are also some advantages in the determination of size and shape of the heart in a known cardiac, and also to follow the changes during the management of the case.

DISEASES OF THE THYROID GLAND*

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IN THREE PARTS.

PART I

In any intelligent study of the thyroid gland there are a few basic facts which should be borne in mind. The blood supply of the thyroid is very abundant. Each 100 grams weight receives 560 cc. of blood per minute, while the kidney is receiving 100 cc. and the head only 20 cc. to each 100 grams weight. The normal thyroid then is 5½ times more vascular than the kidney and 28 times more vascular than the head. In disease, such as thyroiditis and the more active forms of goiter, the vascularity is many times increased. The blood supply of an organ is an index of its physiological activity.

Besides the fibrous frame-work, the blood and lymphatic vessels and the nerves, the gland is made up of a variable number of closed vesicles of different sizes and shapes, called follicles or acini, which contain the colloid substance. These vesicles comprise the histological unit of the gland, and are the sole reason for its existence. They are grouped into lobules by the connective tissue septa which are continuations of the internal capsule. Each is independent, for they do not communicate with one another by any sort of duct. The smaller follicles are the younger and are more peripherally situated in the lobule. The larger follicles in the center of the lobule are older, are the ones actively functioning and are filled with colloid.

No other gland in the body possesses the histological lability of the thyroid. The type of the epithelium, the relative size of the follicles, and the amount and quality of the colloid depend entirely on the locality in which the individual lives (whether in a goitrous or non-goitrous district) and upon his habits and general state of health.

The epithelial cells which line the follicles are, as a rule, medium cuboidal cells, but may vary from high cuboidal or a low columnar to a flat endothelioid variety. The smaller and more youthful acini contain the least amount of colloid,—sometimes none at all,—and are lined with the higher type of cell. The mechanical pressure of the colloid within the vesicle plays an important part in determining the type of cell,—thus in the small follicle, containing little or no colloid, the cells are high columnar, while in the large follicle filled with colloid, the cells are flat.

As was natural during the developmental period of thyroid surgery many errors in the interpretation of symptoms and pathology crept in and a loose and perplexing terminology came into use. Little by little a clearer conception of the physiology and pathology of the gland has emerged out of the fog and it has become possible to see the problem more understandingly. The false facts, which have so long clouded the perspective, are being gradually cleared away and the whole question is on a more scientific basis.

The Committee on Classification appointed by the American Association for the Study of Goiter has recently made its report. It covers the ground so admirably that the sooner the medical profession as a whole adopts it in the practical everyday work the better it will be for the advancement of this important field of activity. In what the committee terms its "tentative clinical classification" four types of goiter are included:

Type 1. Non-toxic diffuse goiter.
Type 2. Toxic diffuse goiter.
Type 3. Non-toxic nodular goiter.
Type 4. Toxic nodular goiter.

As is seen this classification is a far cry from any of the older classifications. It is so definitely based on the newer conceptions of physiology and pathology that it seems destined for general acceptance. The old idea that endemic goiter, colloid, exophthalmic and adenoma of the thyroid are distinct entities has been so thoroughly discarded that to retain the old nomenclature is only calculated to confuse.

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*Read before the Academy of Medicine of Long Beach, Calif., March 11, 1932.

An effort will now be made to trace some of the steps by which the present conception of goiter has been reached. The road has been crooked and frequently has had to be retraced, but a few general facts have been arrived at which seem destined to stand.

The idea that the administration of iodine would exaggerate thyrotoxicosis had become so fixed in the medical mind that Plummer's announcement that the use of iodine would relieve symptoms and could be used to prepare the toxic patient for operation seemed revolutionary,—as it was.

We had felt so confident for so long that nodular goiter meant adenoma of the thyroid that we were skeptical about accepting the statement that about 90 per cent of these nodular goiters are not adenomatous but due to involutional changes following hypertrophies and hyperplasias and only 10 per cent of them are true adenomas, and yet this has been definitely and scientifically proven.

For our knowledge of the physiology as well as pathology of the thyroid we are greatly indebted to Dr. W. F. Rienhoff, Jr., of Johns Hopkins, whose researches have been verified by other observers. One of the outstanding difficulties was to determine the normal histology of the gland because it was found difficult to find a really normal thyroid, since so many of them, especially in goiter districts, are not normal, and many early observations were made upon glands which were later shown to be pathological. This fact has given rise to many absurd conclusions since a description of a pathological thyroid under the impression that it is normal, is bound to lead to incorrect conclusions.

Rienhoff found a preponderance of small nonfunctioning undeveloped follicles in the normal gland, and concludes that they constitute a reserve which, when extra demands are made upon the thyroid because of a more intense manner of living, will hypertrophy and undergo hyperplasia of the epithelium, and become fully functioning follicles. Thus, in the exophthalmic thyroid, the proportion of small undeveloped follicles is decreased and the number of large fully developed follicles is greatly multiplied.

As would naturally be predicated from the very active circulation the physiological function of the thyroid is exceedingly intense. It largely controls the metabolism of the body and, in times of stress, is called upon for almost supernatural activity to keep the bodily changes in a normal condition. Its chief function seems to be to supply the ecenomy with just sufficient iodine in the correct combination to help the tissues to assimilate the proper amount of nutrition to maintain the normal replacements made necessary by waste. As Plummer has so tersely put the proposition: "The function of the thyroid is to maintain approximately 14 milligrams of thyroxin in the tissues at all times."

When one stops to consider what diverse influences occur in the human body to modify tissue waste and tissue building, it is easy to realize the important role the thyroid gland plays to sustain the proper balance. To perform this office gracefully its physiology must be very mobile and adaptable.

A mere hand to mouth production of thyroxin would fail to meet the bodily needs, for when, because of intense physical or mental stress, there is a sudden demand for an unusual amount of thyroxin it would be a severe tax upon the thyroid to be called upon suddenly to furnish a large amount of this substance without having accumulated a stock on hand. Therefore nature, whose foresight is uncanny, arranged to have a liberal supply of thyroxin stored in the colloid at all times, ready to fill all special orders within reasonable limits.

In the ordinary course of events the demand of the tissues for thyroxin is fairly uniform day by day and the amount of iodine regularly ingested is sufficient to keep a store of thyroxin abundantly adequate to meet the ordinary demands without embarrassment. It is fair to suppose that under the usual conditions when a person is leading a sane life with no unusual physical or nervous tension the thyroid mechanism does its work easily without apparent effort. As long as this state of affairs continues the thyroid remains normal, with only enough fully-developed and functioning follicles to elaborate the usual amount of thyroxin and store it in the colloid.

Only two conditions are likely to arise to throw the demand for thyroxin and its production out of balance. (1) An insufficient amount of iodine may be ingested with which to manufacture enough thyroxin to supply the needs of the tissues. (2) Because of extraordinary physical, mental or emotional stress the demand for thyroxin may become so excessive that its daily production is inadequate and requisition has to be made upon that which has been stored up for a rainy day. In a short time the storehouse will become emptied and the thyroid will no longer be able to fill its orders. When either of these conditions obtain the whole mechanism of metabolism is thrown into confusion.

Let us consider for a minute these two conditions of supply and demand. Suppose the amount of iodine ingested is so much below the bodily requirements that not enough thyroxin can be manufactured to meet the daily needs. A factory can as easily manufacture shoes without leather as a thyroid can make thyroxin without iodine. But it tries to accomplish the impossible and an economic panic ensues. The secretory machinery of the gland is speeded up more and more but the results are futile because there is not enough iodine available to make the required amount of thyroxin. The thyroid circulation is immensely increased and the gland undergoes a physiological hypertrophy and hyperplasia. It is a true work hypertrophy. The small undeveloped follicles become enlarged and begin to function. The number of epithelial cells lining them is multiplied and heaped up and an enlargement of the whole gland results. This is what has usually been called an "endemic goiter" but following the new nomenclature should be called a nontoxic diffuse goiter.

The condition just described is most commonly met in the so-called "goitrous districts" where the amount of iodine in the food and water is inadequate. In these regions there is usually enough iodine ingested to supply the body with sufficient thyroxin to maintain a level metabolism under normal bodily and mental conditions. But the inhabitants are on the verge of an iodine famine all the time. They use up all their stock of thyroxin day by day. A demand for an extra supply cannot be honored. As soon as need for a greater amount of thyroxin occurs, as by the advent of puberty, or a little more worry over school work, more strenuous labor, a slight friction in home life, or a cardiac disturbance due to the fascinations of a neighbor boy there is a call for a greater amount of thyroxin and the trouble starts. If, at this juncture, it were possible to administer a few doses of iodine, the catastrophy could be prevented.

The second condition to be discussed is where the supply of iodine in the food is normal and adequate for any ordinary needs. Suddenly, without warning, the patient is put under a heavy nervous, mental or physical strain. The basal metabolism is immediately increased. Until the thyroxin already stored in the colloid is exhausted there is no break in the balance of supply and demand. Should the extra strain be only temporary there may be enough thyroxin stored to meet the requirements, but if the strain continues after the colloid has been emptied of its active principle, the work of the thyroid gland is tremendously speeded up and results in hypertrophy and hyperplasia.

Now let us suppose after the gland has become increased in size and function, the follicles having become hypertrophied and excessively active, being filled with heaped up epithelial cells, the circulation of the gland has become greatly increased by more and larger arteries, in short the thyroxin factory has been speeded up to an intense degree of activity, what is going to happen if the original strain which precipitated all the trouble ceases?

If the toxic element is slight and the histological changes are not too great there will be a gradual slowing up of the physiological activity and a readjustment with restoration of the gland to as nearly normal as possible. The gland will somewhat decrease in size, but there will still remain a much higher proportion of the large follicles than before the storm. The fibrous tissue, which became much above normal, will contract, and probably a few involutional nodules will form, resulting in an incipient "nodular goiter". It is only when there have been a number of such cycles of hypertrophy and hyperplasia followed by recrudescence that true "nodular goiter" is formed.

It would be fortunate if all attacks of this kind could end thus fortunately. In most cases the cessation of the physical, mental and emotional strain is not followed by relief of the abnormal train of symptoms and the resulting pathology. A Frankenstein has been reared up and has become too strong to be controlled and will eventually destroy its creator.

The physiological capacity of the thyroid machinery has been tremendously increased and its ability to manufacture thyroxin is at a maximum. The habit of transforming iodine into thyroxin has become so thoroughly established that much more thyroxin is now being manufactured than the tissues need; but it is thrown into the circulation nevertheless, thus keeping up an excessive metabolic activity.

The increase in tissue consumption due to the high metabolic rate has caused an immense increase in appetite. The ingestion of more food supplies the thyroid with more iodine which is promptly converted into thyroxin and this is done on a large scale because of the increased function. The abnormally large amount of thyroxin again accelerates the basal metabolism and thus the vicious circle is complete and will not be interrupted until a link in the chain is broken. Thus far the only certain method known which will reduce the manufacturing capacity of the thyroid is to remove enough of the gland so that what is left is able to elaborate only enough thyroxin to supply the tissues with the amount they really need.

After these preliminary considerations it may be of interest to draw a brief picture of the four types of goiter included in the classification made by the Committee of the American Association for the Study of Goiter.

Type I. Non-toxic Diffuse Goiter. This type has for its chief cause a lack of iodine, at least only enough to maintain an even basal metabolic rate under the most normal daily life. In the effort to manufacture thyroxin the circulation is increased, the non-functioning follicles become larger, there is an increase in size and number of the epithelial cells lining the follicles, and this we call hyperplasia; so many of these cells form that a real hypertrophy is produced. The increase in the volume of the thyroid is due to the cell increase, an augmentation of the blood supply and an increase in the fibrous elements.

Although it is called non-toxic there is reason to suppose that there is a mild form of toxicity, and many of these cases have a slight increase in the metabolic rate. The histological changes are the same, but to a less degree than those found in the toxic diffuse goiter. Fortunately in these cases either more iodine is supplied or the extra physical strain is slight or temporary and the damage is not so great as to preclude a return to a practically normal condition, although the gland will never be perfectly normal again. It usually remains somewhat increased in size due to the large number of small follicles that have developed and to the permanent increase of the connective tissue, but it is capable of functioning normally.

Type II. Toxic Diffuse Goiter. Here is a condition much more serious. It is what we have been accustomed to call Exophthalmic Goiter, or Graves' disease. The etiology is obscure and it seems quite as prevalent in non-goitrous as in goitrous regions. Whatever else may be said of it, it is not the result of iodine deficiency, and its incidence is apparently on the increase. It affects chiefly the young and those of middle age, its maximal incidence being between the ages of 15 and 45. Although there is no definite proof, infections, particularly upper respiratory infections, seem to play a part in its etiology, but infections alone are not able to precipitate an attack.

The classical conception of the origin of toxic diffuse goiter is that it follows sudden grief, fright, or physical, mental or emotional stress. This has been considered the chief causative factor and all are agreed that most cases originate at such times. But now a doubt seems to have arisen as to the correctness of this explanation. When an acute fulminating hyperthyroidism occurs, apparently out of a clear sky, there is evidence that a low type of trouble has existed for months or years and it does not originate *de novo*. In our ordinary methods of observation it is noted that a great emotional storm precedes the acute outbreak and it has been customary to regard this as the cause of the hyperthyroidism. Is it not reasonable to regard the emotional attack to be due to the low type of hyperthyroidism previously existing? Thus considered the emotionalism might be regarded as a result of the hyperthyroidism rather than the hyperthyroidism being caused by the emotional outbreak. Do not misundestand me. I am not trying to imply that all our past conceptions in regard to mental and emotional stress being the cause of toxic goiter are wrong but I do believe that goiter begins more gradually than usually supposed. Overwork and worry may and probably do play a role in its etiology, but after once begun the pathological gland increases the emotional element which gave the initial push and this in turn increases the hyperthyroidism.

SYMPTOMS

The cardinal symptoms of toxic diffuse goiter are really classic. They are enlargement of the thyroid gland, tachycardia, tremor, exophthalmus, a voracious appetite, and elevation of the basal metabolic rate. Not all of these are constantly found. Sometimes only the increased metabolic rate is present, and this may be as truly a toxic goiter as if all the other symptoms were in evidence.

A rather detailed analysis of the symptoms may be of value not only in making a diagnosis but to aid in evaluating the severity of the case. In most cases the gland is not greatly enlarged. Sometimes no enlargement is apparent on superficial examination, but in true exophthalmic goiter, or what we prefer to call it, toxic diffuse goiter, there is some increase in size. Usually the enlargement is diffuse throughout the gland, though sometimes one lobe is slightly larger than the other. It is at first soft and spongy, becoming firmer and more elastic as the disease progresses. If there have been several remissions and exacerbations the size, shape and consistency are very variable. In the more chronic cases there may be a few or many nodules present, depending solely on the number of exacerbations and remissions which have occurred.

It is very important to develop a good technique in examining for goiter. When the patient lies down there may seem to be no enlargement, when it is perfectly apparent when she is sitting. The head should be turned from side to side, flexed and extended. When the patient is asked to swallow it will reveal if there is movement of the gland. The relation of the gland to the carotid should always be determined.

Eye Signs: Sometimes the eye-ball does not definitely protrude, but a staring expression may be noted. In approximately half the cases there is definite exophthalmus. Sometimes it is only present on one side and often the protrusion is greater on one side than the other.

Widening of the lid slits is often noted even when there is no true exophthalmus. It is accompanied by a staring expression. This phenomenon is caused by a retraction of the upper lids which exposes the sclera. This symptom is best brought out by causing the patient to suddenly fix her eyes upon some object.

Infrequent winking is another important sign. A normal individual winks 30 to 40 times per minute. In hyperthyroidism about one-third of the cases wink much less frequently, sometimes only once in two to four minutes. It is fair to say this observation is of much greater value if it is made without calling the patient's attention to what you are doing.

Lagging of the upper lid is present in about four-fifths of the cases and is considered the most dependable of all the eye signs. Many times the lid comes down in a succession of jerky movements.

If the forehead does not wrinkle when the eyeballs are turned upward we have another sign of considerable value.

There are several other eye-signs which are less important than those mentioned.

Cardiac Signs. A persistent tachycardia with palpitation are symptoms which usually run parallel with the basal metabolic rate and the degree of hyperthyroidism. The premature systolic sound and auricular fibrillation are the arrhythmias most commonly found. It is a question whether they are due to degenerative myocardial changes or to the thyroid secretion stimulating the sympathetic with a simultaneous inhibition of the vagus nerve.

Disturbances of the Skin and its Appendages. A moist, pale, thin and delicate condition of the skin is a characteristic of hyperthyroidism. There is habitually a hyperactivity of the sweat and sebaceous glands. More oil is secreted by the skin than is normal. The sweating is not so likely to be general as local. The sweating areas are most often the axillae, the hands and feet. Acne vulgaris spots are frequent.

Most cases of hyperthyroidism have a subjective sense of heat. Rooms kept at ordinary temperatures are complained of as "too warm". The surface temperature of the body is above normal.

Many of these patients show a diffuse erythematous blush over the head and neck, and this is probably due to the action of the thyroid secretion on the sympathetic nervous system.

A pigmentation is often seen about the eyelids, axillae, genitalia, linea alba and the areola about the nipples.

Falling out of the hair is not uncommon and sometimes the hair becomes gray prematurely. Trophic disturbances of the finger-nails are often observed.

Most, if not all, of these phenomena affecting the skin and its appendanges are probably due to the secretion of the pathological thyroid stimulating the sympathetic nervous system.

Disturbances of the Alimentary Canal. Almost every case of true toxic diffuse goiter is characterized until towards the close by a voracious appetite with loss of weight. As Rienhoff so aptly puts it, "The furnace is stoked with the drafts open." The burning of the tissues is so rapid that it is impossible to consume enough food to replace it. A patient who happened to have a gastric ulcer and a toxic goiter would be a pitiable object. A laborer eats less than one of these patients and retains his weight, but he rests at night,—the goitrous patient never rests.

Vomiting, often projectile in type, occurs in about one patient in eight. The vomiting is frequently paroxysmal and usually occurs without nausea. The vomiting may be repeated several times at short intervals and then entirely disappear.

In cases of unusual severity or when a fatal termination is imminent there may be many watery stools per day. As soon as improvement occurs the diarrhoea ceases.

Disturbances of the Genito-Urinary System. Albumen and granular casts are sometimes present in severe cases, but this does not mean a serious kidney lesion for at autopsy only a cloudy swelling of the parenchyma is found.

Not infrequently the patient with hyperthyroidism has an alimentary glycosuria, and the patient who has coincidentally a true diabetes is found to be less amenable to insulin than if he did not have hyperthyroidism. When a diabetic hyperthyroid case has had his thyroid removed it takes less insulin to control the sugar than before.

Polyuria is often observed. This is attributed to two causes: (1) to increased intake of fluids due to the voracious appetite; (2) to the nervousness of the patient.

Some of the urinary solids are increased, such as the total nitrogen, urea, uric acids and the phosphates.

The menses are irregular in time and in duration in severe cases. Sometimes menstruation ceases entirely and does not reappear until several months after thyroidectomy. It has been asserted that when young women's menstruation is persistently irregular it should arouse suspicion of a disordered thyroid.

Disturbances of the Central Nervous System. One of the first manifestations of toxicity of the thyroid is "nervousness". The patients become unreasonable, irritable, intolerant, impatient, apprehensive and do not sleep. Mental depression alternates with abnormal exaltation and even in rare cases acute toxic delirium may occur. Many of the cases are subject to dizziness, vertigo and headaches. These patients are given to hasty speech, causeless gaiety and a rapid flow of thought which is usually not logical. They often become untruthful and in general are not dependable. One of the most noteworthy phenomena is the inability of these patients to keep up any sustained mental or physical labor. They may start an activity with great enthusiasm but quickly tire of it and drop it.

The physical reactions to hyperthyroidism are analogous to the mental. Tremor of the hands and fingers is constant. The tremor is rapid and fine. Even the tongue, eyelids and lips may partake of the tremor. The muscles tire easily. Walking up stairs or up a hill is almost impossible because the quadriceps and other muscles of the lower extremities tire so quickly.

(To be continued in next number.)

INFANT FEEDING*

E. S. WEGNER, M. D.,
Lincoln, Nebr.

During a conversation, some time ago with a physician who is in general practice, he made the statement that infant feeding had been so simplified that the pediatricians were no longer necessary. "By teaching these simplified methods," he said, "they have made infant feeding so easy that any doctor can take care of his own feeding cases. He no longer needs a pediatrician's help. The pediatrics game is a thing of the past."

Be that as it may; a review of case histories shows that a large part of the pediatrician's work still is infant feeding. Many of the referred cases which come from general practitioners are feeding cases; and others who have not been referred, come seeking advice on feeding problems. Often they tell us their family doctor is not interested in baby feeding; or, their family doctor hasn't time to attend to the necessary details in a feeding case.

Although infant feeding has been simplified it still has its problems. And if, when we speak of simplified methods we have in mind simple dilutions of cows' milk with some form of carbohydrate added, we must remember that this method is not new. In fact it is much older than pediatrics as we know it today, for we read that Von Rosenstein advised this method and used it as early as 1750.

Infant feeding has been complicated for the doctor. to some extent, by present conditions, and by numerous agencies and organizations. Consider for instance what is being done to educate the public along the line of infant care and infant nutrition. From the Children's Bureau at Washington down through the welfare departments of the states and from municipal health departments, comes a flood of bulletins with advice to expectant mothers and to mothers of infants. This flood is augmented by bulletins and pamphlets from educational institutions, insurance companies, manufacturers, clubs, magazines and many other sources. Lay publications carry articles by the hundreds. Most of these contain advice which is good, but often the advice is misinterpreted and trouble results. A mother may follow the advice of her doctor until she reads what she believes to be conflicting advice in some magazine or pamphlet. If she frankly asks the doctor to explain the conflicting advice and he takes the trouble to do so the day is saved. If on the other hand the doctor frowns upon the article which she has read, or perhaps admits that he hasn't read it, she will often seek out a physician who will answer her questions satisfactorily.

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*Read before annual meeting Nebraska State Medical Association, Lincoln, May 24, 1932.

Information which can help mothers to feed their children intelligently from early infancy to puberty may easily be obtained from many of the afore mentioned sources. If the doctor will not take the trouble to attempt to harmonize this information with his advice many of the mothers will loose confidence in his ability.

Another complicating factor is the advertising of food products. Here again a mass of information is scattered broadcast. Much of this information is good and may be helpful. If in our case the problem was limited strictly to the advertising by manufacturers of substitutes for mother's milk; or for those items which might be considered infant foods, it would be bad enough, but we find that if a particular article lends itself in any way to some special use in the infant's dietary, it is quite likely made to appear in the advertisement as the main item of diet. And worse than that is the custom of printing series of formulas on labels, or advertising to the mother that she may write to the company for series of formulas, thus giving the impression that no further knowledge is necessary.

Some manufacturers of baby foods have never published formulas for the laiety. They have always advised mothers to seek the doctor's advice in feeding the baby.

Since the bad features in the custom of furnishing formulas to the laiety have been brought to their attention some other manufacturers have discontinued doing so. These two classes of manufacturers should receive our support.

"Buy a can of so-and-so and follow the directions on the label," has been advised far too often. The doctor who gives such advice may think he is serving his clientele that way, but as a pediatrician I am certain that that kind of advice eventually sends business to my office.

The agents or detail men who demonstrate substitutes for mother's milk or milk modifiers, often unwittingly add to the doctors troubles instead of being a help. Each man demonstrates the simplicity and practicability of his particular product. Perhaps he has charts, graphs and pictures to help drive home his points. He speaks convincingly, and almost without exception his statements are based on fact. The doctor asks a few questions. takes a few samples and feels that he is now prepared to handle the next feeding case that presents itself. He determines to remember what was told him. When the case comes there probably is something about it that does not fit into the picture drawn by the salesman. This something seems to be the one possibility that the salesman didn't cover, and the doctor doesn't know what to do about it.

The real trouble in that situation is, the doctor doesn't know the fundamentals of infant feeding. Any one of a large number of baby foods might be chosen to feed a given case and the feeding might be successful, provided the fundamentals of infant feeding are taken into consideration. That is why it is possible to follow directions on the label in feeding many normal babies; but sooner or later we meet the baby with whom the routine formula "fails to agree."

If the fundamentals are known and taken into consideration in their use, most of the products on the market have virtue.

Any general practitioner can acquaint himself with these fundamentals. He can easily gain the knowledge necessary to feed babies intelligently. If he is sufficiently interested to master a few fundamentals he will immediately place himself in position to better serve his community. He may add to his income, and by the application of the knowledge of these fundamentals together with his good common sense he will gain rewards that are priceless.

It has often been said that infant feeding is an art as well as a science. I believe it is much more art than science.

This paper cannot cover a course in infant feeding, but even in the short space allotted, the essentials can be pointed out.

First of all something should be said about breast feeding. No paper which deals with infant feeding can be complete unless the importance of breast feeding is emphasized. It seems strange that in spite of all that has been said and written on the subject in the past fifteen years, one still sees many babies who were taken off the breast because the breast milk "didn't seem to agree."

The cases in which the mother's milk will not agree are rare indeed. The contra indications to breast feeding are well known. Aside from them except very rarely, we should keep the baby nursing its mother's breasts. In most instances where difficulty is experienced the cause lies in the quantity of the milk secreted and not in its quality; or if the quantity is adequate some adjustment of feeding interval, or a few simple suggestions regarding other things may right the troubles. What Dr. Oliver Wendell Holmes said a hundred years ago is still true today. "A pair of substantial mammary glands have the advantage over the two hemispheres of the most learned professors' brain in the art of concocting a nutritious fluid for infants."

It is easy to take the baby off the breast, it may not be so easy to find a food for it which will do as well as the breast milk did.

Whether the baby is on the breast or is artificially fed, one of the most important essentials is a regular feeding schedule. The number of feedings to be given each twenty-four hours and the interval between feedings should be definitely fixed. What the interval should be may vary in any given case, but most average babies will do well on a four hour schedule with five feedings each twenty-four hours. We usually write down the hours for the mother (6 and 10 a. m., 2, 6 and 10 p. m.)

The quantity which should be given at each feeding may next be considered. Roughly, we say, give the baby two ounces more in quantity than it's age in months. At the extremes this rule does not hold. A baby less than a month of age may require four ounces of formula, and we never write for more than eight ounces for any baby. One must use common sense.

The infant's requirements so far as food is concerned may roughly be stated as follows: From one and one-half to two ounces of milk, and from one-tenth to one-eighth ounce of added sugar per pound of body weight in twenty-four hours. If we wish to express the requirements in calories we say, up to about six months of age the infant should receive fifty calories per pound of body weight in twenty-four hours, and after six months about forty calories per pound.

It is then necessary to know the caloric value of milk which is twenty calories per ounce, and of sugar which is one hundred and twenty.

Knowing the food requirements of the infant and knowing the value of the foods, a little simple arithmetic works out the formula. That probably is the scientific part of infant feeding. Added to this we need a little practice and good common sense which give us the art of infant feeding.

DISCUSSION

HOWARD B. HAMILTON, M. D., (Omaha): Dr. Wegner has explained briefly the essentials of infant feeding. We have much material put out by advertising firms, most of which is unnecessary. With a little knowledge of the fundamentals of figuring formulae, it is possible to feed a baby with almost any food containing the essential elements. After that indication has been met, at least in a partial way, one of the most important things, which is commonly neglected, is failure to secure variety. Especially is that true in the premature or twin or rapidly growing baby, in which there is a possibility the baby is receiving an insufficiency of essential elements.

At the meeting of the American Medical Association at Portland, someone made reference to propaganda put "out" by doctors and "across" by the milkmen: "A quart of milk for each child every day." The statement was made it was one of the most pernicious pieces of propaganda ever put across. It makes a one-sided diet, and we fail to get variety.

Premature babies are born with a small amount of minerals. I think it is of great importance to give them variety. We can early add cod liver oil and orange juice. We can also give egg yolk, which is usually well tolerated. It is the substance from which the chicken is built. In order to supply minerals, we can give vegetable soups, finely strained. I think I get no more joy in taking care of any patient than of a premature or twin who is rapidly growing, but almost surely becomes anemic and rachitic to a certain extent. By giving a wide variety, we can do more for them than by giving a simple dilution of milk. Milk is a good food, but not complete in itself. They must have additional things. One of the most important things in diet from infancy to old age is variety. By paying particular attention to that, it is surprising what may be accomplished.

JOS. A. HENSKE, M. D., (Omaha): I wish to express my appreciation to Dr. Wegner for presenting a paper stressing his opinion on advertising and false propaganda to the lay public. About a year ago the American Medical Association appointed a Food Commission to determine the advisability of the then prevalent method of placing upon their cans or containers or including literature to the lay people containing formulae or milk mixtures for the so-called normal baby. On this commission three pediatricians were named which formed the minority report and through their efforts sufficient amount of pressure was brought to bear that the evaporated milk association decided to discontinue instructing the laity in regard to feeding babies. At that time the question came up, "What is a normal baby?" No pediatrician has been able to decide. We cannot standardize babies.

For successful infant feeding there are six requirements necessary to meet and they are as follows: First, is protein. It is necessary to supply the minimum amount 1.5 grams per pound to the growing infant. Second, the minimum amount of fat which is 1.5 to 2 grams per pound. Third, carbohydrate for energy. The minimum requirement is 5 grams per pound. Fourth, water. An infant needs at least one fifth of its body weight. Fifth, mineral requirements which is sufficient in one and one-half ounces of milk per pound of weight. Sixth, vitamins A, B, C and D which are added to the formula and are given in the form of orange juice, viosterol, cod liver oil and yeast. The requirements for the formulae for an infant can be met by the use of whole milk, evaporated milk and powdered milk with the additions of the carbohydrates, water and the addition of the various vitamins.

It is true that many doctors do not take time to figure out formulae. It is usually not due to the lack of knowledge on the part of physicians but to the lack of interest and time consumed.

In the past eight months I have had two cases which show a startling lack of examination and not the result of the lack of knowledge on the part of the doctor. Both cases gave similar histories. The infants did not thrive well following birth and returned to their physician. The physician without examination concluded it was due to the lack of sufficient nourishment and prescribed adequate feeding without examining the infants. At the time of my examination one infant was five months, weighing eight pounds; the other ten months weighing ten pounds. In obtaining the history one would come to the conclusion that it was not a feeding case but evidently due to some pathological condition. No history of vomiting and apparently the child had adequate formulae, but on interrogating the mother the child would not take more than a few ounces of the food prescribed. Examination of the infants disclosed that they suffered from a congenital heart and we know in these cases a baby will not take sufficient amount of food on account of the effort necessary to do so. In both of these cases we were able to continue practically the same formulae but removing the effort by giving the infant the food by tube. By this method they gained in weight and a marked improvement in the general condition of the infant.

It is not due to the lack of knowledge on the part of the general practitioner but to the lack of applying in a proper way by examining each baby before prescribing.

J. H. DOWNING, M. D., (Rising City): They talk about difficulty in having the mother nurse the baby, and the drying up of the mother's milk. Wouldn't it make a difference how the mother was fed?

I ask that question because I have known of great benefit being obtained by having the mother properly fed for a period of two or three months before childbirth.

This is in mothers who had been unable to give sufficient nurse with previous children.

F. A. WELLS, M. D., (Lincoln): I want to sound a note of warning that in the feeding of the normal, healthy, breast-fed baby, do not pour in too much cod liver oil and orange juice. Most of us are fairly normal and healthy. I did not see a bottle of cod liver oil until old enough to practice medicine. I believe the tendency is too strong to think Nature made a big mistake, and that we can improve on Nature.

I want to thank Dr. Wegner for emphasizing the value of breast feeding.

S. A. SWENSON, M. D., (Oakland): I wish to express my appreciation to Dr. Wegner for his paper. I was a little sorry he did not go into detail about certain features of infant feeding. One of the other child specialists who discussed the paper did not furnish that desired information either. We agree that the mother's milk is best for the baby. I try to impress that on the mothers of whom I take care. It does not always work. I have a mother who is feeding her baby on the bottle because she did not persistently use her breasts. When she came from the hospital, she became tired and nervous, and said she dried up. One mother had bad nipples.

I emphasize using the breast at least from six to eight weeks, not only for the baby's sake, but the mother's.

If you have to use artificial feeding, how are you going to start? I should like to hear how Dr. Wegner starts. When the mother nurses a baby, I usually start with artificial food—prepared food—because, as a rule, the mother uses her breast partly, the baby gets along pretty well. After the mother is dried up, I change to fresh cow's milk. I start with about one-third milk and increase it as fast as the baby can stand it, with a certain amount of sugar. I do not figure calories. I think it is good mental exercise, but a mother will not do it.

Another question I wish to ask is, "How soon can you begin to feed vegetables?" Dr. Hamilton or Dr. Henske spoke about feeding vegetables. I like to begin as soon as possible. I think the child does well sometimes after you begin feeding vegetables, if he has not done well before.

DR. WEGNER, (closing): Mr. Chairman: I want to express my appreciation to these gentlemen who have so kindly discussed this paper.

It was not my purpose to give a course in infant feeding. I tried to stimulate interest, so far as the general practitioner is concerned, in making an effort to approach the subject intelligently. If a doctor will take into consideration the fundamentals, he can do infant feeding intelligently, and his good sense will help him to arrive at the answer to questions raised.

I purposely omitted accessory food elements, because it is a subject in itself. Last week the State Dental Association met in Lincoln. They had Dr. C. Ulysses Moore, of Oregon University, to speak to them. He used one afternoon and an evening speaking on the importance of mineral foods.

As to the difference the mother's diet makes, according to Dr. Moore and the things we read, it makes all the difference in the world. Dr. Moore says she should eat a pound of yeast during the last five months of pregnancy. Accessory food elements must be taken into consideration.

While this doctor was discussing the question, another doctor said to me, "It is impracticable to try to feed a baby partly on the breast and partly on artificial food." Most of our babies are so fed, and they get along very well. We have no trouble about the breast drying up, because we insist they empty the breast before they get the bottle, and the secretions from the breast can be increased so we can discontinue artificial feeding.

As to how to start artificial feeding that depends on the individual case. We do not expect our mothers to figure calories. We figure them. It is necessary for the doctor to take them into consideration. I had a three months' baby whose formula called for 46 ounces of whole cow's milk. If the doctor had taken calories into consideration, he would never have written a formula like that. You must make your formula conform to the needs of the individual baby.

I thank you.

CLINICAL ASPECTS OF EXCRETION UROGRAPHY

ARBOR D. MUNGER, B. Sc., M. D., F. A. C. S.,
Lincoln, Nebraska.

With the advent of a clinical agent for introduction in the vein by which the urinary tract could be delineated. a distinct advance was added to our ability to study certain physiological details of these structures.

Excretion urography not only is serving to clarify our conception of pathology of the urinary tract, but has given us new principles of therapy.

It must be emphatically stressed that instrumental pyelography and excretion urography are essentially different from each other.

Instrumental pyelography has imbued us with a morphological viewpoint of disease and naturally has all the limitations of a method which can be used only to detect anatomical changes. Whereas, excretion urography is physiological in application and in addition to detecting anatomical changes, presents a picture of kidney function as well as the dynamics of the urinary tract. It is to be expected that excretion urography will eventually increase our knowledge or the physiology and pathology of the urinary tract in proportionally the same manner as instrumental pyelography increased our knowledge of the pathological anatomy. Increased experience in the application and interpretation of this agent is doing this very thing. It is not so much that our earlier urograms were failures, as was our lack of sensing what it was all about. It was often stated that normal kidneys failed to excrete the contrast substance. Reflection will establish the impossibility of this. There is no such phenomenon in physiology wherein normal kidneys cannot excrete a non-injurious kidney threshold substance at one time and excrete it at another. On this physiological principle all known kidney function tests rest. Normal functioning kidneys with normal or hypertonic motility of the urinary tract are least suitable for excretory visualization.

Good visualization necessitates various portions of the urinary tract being filled with contrast substance—naturally visualization occurs best with the urinary tract in diastole. If exposure is taken in systole visualization is lacking or at least indistinct due to retention in single calyces or small portions of the ureter only and should not be overlooked.

Excretion urography is founded on the fact that a normally functioning kidney eliminates the contrast substance in the measure of its absolute

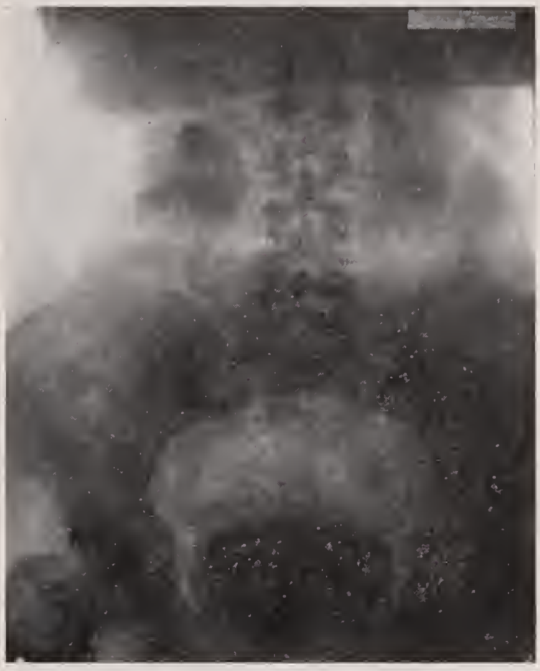

Fig. I-A.

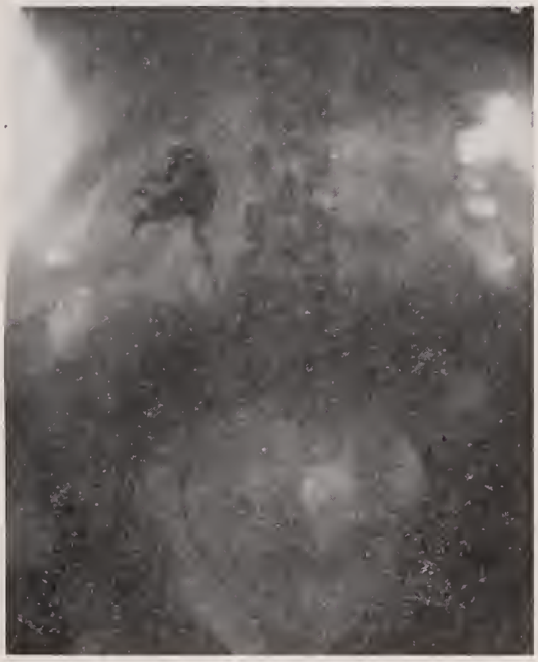

Fig. I-B.

Figures I-A and I-B compares the excretion urogram and retrograde pyelogram in the same case. It is noted in the retrograde pyelogram that the pelvis and calyces are in sharper contrast than in the excretion urogram. The dilated pelvis and calyces appear in systole and the ureteral dynamics are not revealed. In the urogram there is a simultaneous study of the physio-pathology and dynamics on each side.

or relative kidney threshold. Hence the elimination of this substance is an index to kidney function. The work of Hughes and Peterfi has demonstrated very conclusively that the uroselectan group is eliminated principally through the glomerulus. Hence the value of this procedure in detecting glomerular damage. In obstructive disease of the urinary tract and in surgical kidney disease, tubular damage is primary and the retention and enrichment of the contrast substance enhances visualization so greatly that one might be inclined to overvaluate the kidney function. But here we must learn to evaluate our kidney function in connection with the anatomical findings.

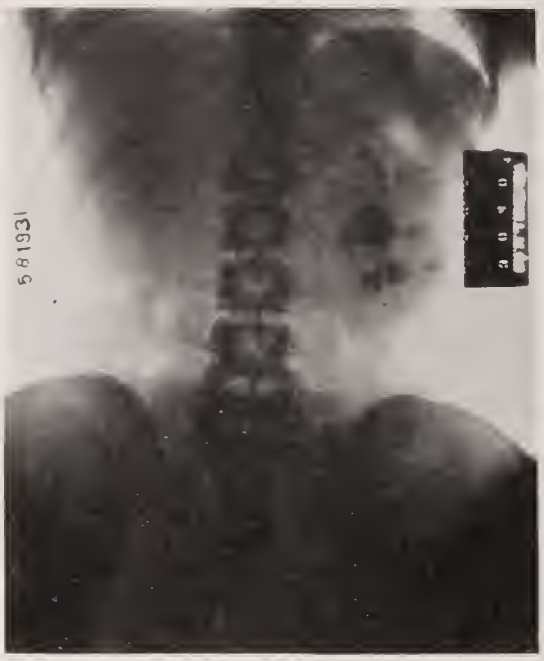

Fig. 11-A.

(Note that by mischance the engraver reversed this cut in the making).

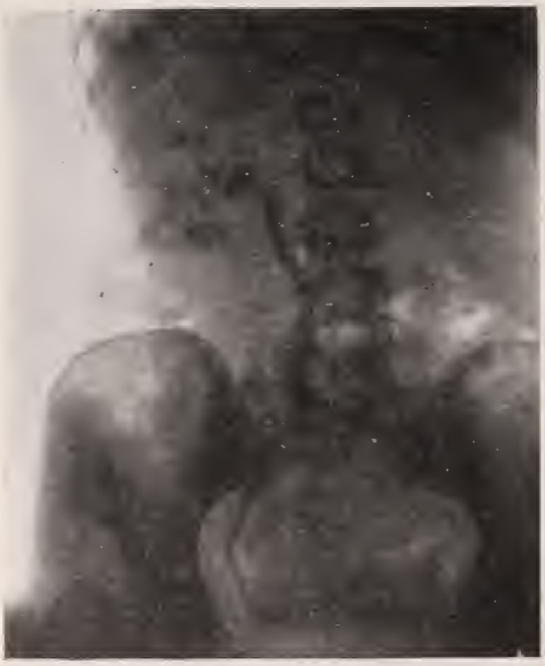

Fig. 11-B.

Figures 11-A and 11-B present an intravenous urogram and retrograde pyelogram in a case of calculus pyonephrosis.

The ureteropyelogram reveals the pathology excellently. This kidney was devoid of function. The opposite kidney was decidedly depressed functionally. These findings are corroborated by the intravenous urogram. There is no dye through the right kidney. The area of the left kidney is increased in density and only in a very late picture do we see the dye coming down the ureter and then only in a small quantity. The functional damage in this left kidney recovered itself under intravenous therapy to sufficiently normal to merit right nephrectomy.

It might be mentioned here that compression pictures in excretion urography is definitely contraindicated. It disturbs the functional capacity and distorts the dynamics of the urinary tract. Especially is this true in disease of the peripheral one-third of the ureter. Compression here makes it impossible to judge the degree of ureteral obstruction, while again such artificial means may give pictures which resemble ureteral obstruction. The degree of kidney function may be determined then in many cases by the time of appearance in the pictures and the intensity of the visualization. Such a method, of course, is the test of the function in its momentary state and is by no means a measure of permanent damage until the clinician can determine the reasons for such portrayed functional damage. Naturally it is of utmost importance in excretion urography that the eliminated quantity be great enough to give satisfactory visualization.

Retention of the contrast agent in the kidney as the result of delayed elimination is the reason for the well defined kidney shadows frequently seen whereas at the same time the urogram is indefinable.

In the beginning large quantities of the contrast agent were injected but progress has shown that visualization is not dependent upon the quantity introduced but that optimal success is more dependent upon the amount of the substance eliminated particularly when the eliminated substance illustrates the concentration power of the kidneys. It must appear in the urine as quickly as possible. Good visualization then must be dependent upon knowledge of the normal renal high concentration point. This varies with many of the newer agents being used but may be determined by repeated serial urograms of any one given agent. As a rule, however, the high concentration point is between one quarter and one-half hour after injection with the exception of Abrodil and Uroselectan which occurs three-quarters to one and one-quarter hours after injection. Wherein the concentration power of the kidney is markedly impaired, one will readily conceive that the best contrast substance may fail. Hence it is not the amount of substance introduced, but the amount of substance eliminated which gives the best urograms.

This discussion may well be left with the statement that investigation of newer substances is widening our knowledge of certain aspects of renal physiology and pathology, and that intravenous urography is only an adjunct to retrograde pyelography in most instances.

The series of pictures will illustrate some of the foregoing discussed features.

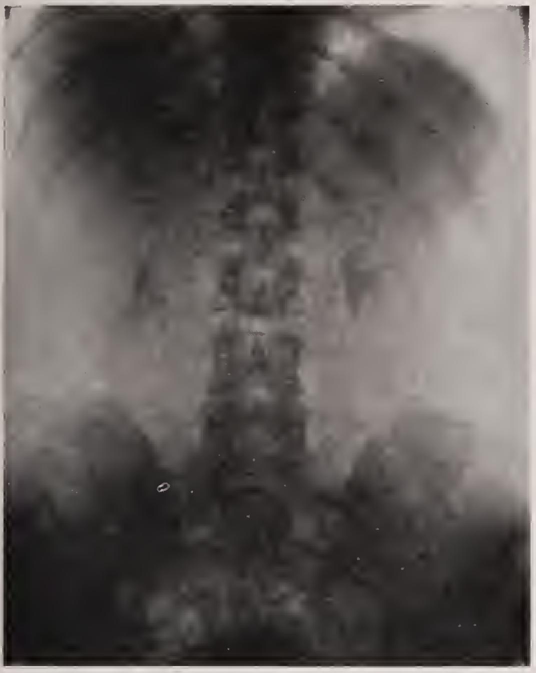

Fig. III presents an excretion urogram of a woman past middle age with severe recurrent hematuria, palpable tumor and pain over the left kidney.

In this case serial picture shows the right kidney filling well in advance of the left and excellent concentration. The left filled late but of good concentration when it did fill. Evidencing definite glomerular damage. The anatomical comparison between the two kidneys is striking. The right is considered normal. The left shows a definite filling defect which was interpreted as a renal tumor. Operation revealed a large necrosing septic infarct involving the upper third of the kidney with a large contracted fibrotic area involving the middle third of an old infarct. This factor was the cause of the filling defect of the pelvis resembling tumor. Nephrectomy—Complete recovery.

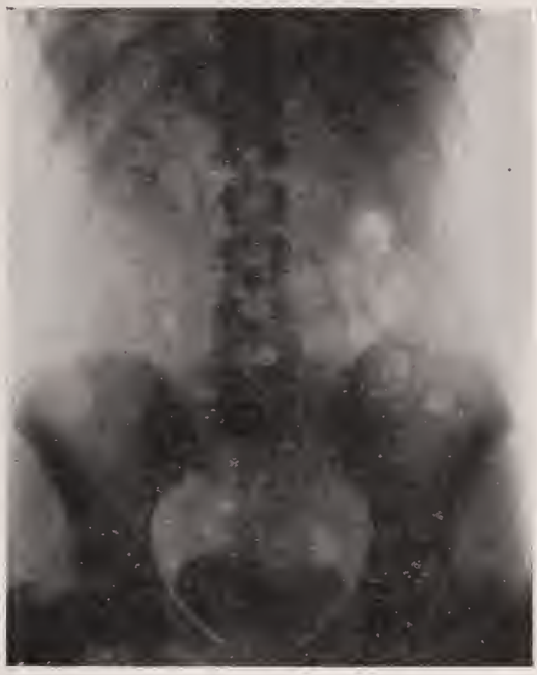

Fig. IV. This urogram presents an interesting follow-up on a traumatic kidney. A renal concussion of sufficient intensity to establish a clot in the right pelvis ureter and bladder. The symptomatic picture at no time was grave enough to merit surgical interference. It was necessary to disintegrate a large clot in the bladder. Catheterization of the ureter was impossible because of organized clot. Attempted retrograde pyelogram was futile. Intravenous urogram increased the density in the renal area but there was no filling of pelvis or ureter on the traumatic side. A rudimentary double pelvis and bifurcated ureter could be seen on the opposite side. Slow convalescence under conservative procedure. The present urogram shows the same findings on the left side with a normal concentration and filling on the previously damaged right side

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MUMPS WITH A DOUBLE COMPLICATION OF MENINGITIS AND PANCREATITIS

W. J. GENTRY, M. D.,
Gering, Nebr.

There has been in the western part of Nebraska an epidemic of mumps which has been unusually long and unusually severe with a marked increase in the number of complications over that which one would expect. Many adults who had always escaped before have taken the disease, a number of whom were quite ill.

Out of eighty-nine (89) cases of mumps which came to me for treatment, nine cases had definite involvement in other regions than the parotid and submaxillary glands, an incidence of complications in ten (10) per cent of cases treated. A list of these complications may be interesting.

1. Orchitis—Four cases, two of which were bilateral.

2. Meningo-Encephalitis—Two cases, the details of which are reported in this paper.

3. Pancreatitis—One frank case and one doubtful case.

4. Oophoritis—One case involving the right ovary which when first seen caused some concern as to whether or not I was dealing with acute appendicitis.

When my first case of cerebral involvement appeared. I became deeply interested and at the suggestion of Dr. Cooper of Scottsbluff, kept careful records so that it would be possible to report it later. It was of particular interest because at the same time a pancreatitis developed. In reviewing the available literature it seemed to me that such a case was probably rare enough to warrant reporting. A few weeks later I saw another case of cerebral involvement with mumps which was of an entirely different character from the first and considerably more severe. Dr. Cooper saw this case in consultation.

CASE NO. I

Female, age 38 years, mother of nine (9) children.

First consulted me for herself on the evening of January 3rd, complaining of a very severe epigastric pain of a sharp tearing nature at times, with a continued dull ache over a diffuse area from the left costal margin to the level of the umbilicus and from the mid line to the left flank. She also was nauseated and vomited, but not of the projectile type. At that time she noticed a slight ache in the back of her head.

Examination showed a thin somewhat pale woman lying in bed crying out from time to time, with severe upper abdominal pain. Her temperature was 102° and her pulse 110°; physical findings were negative, except for a slightly reddened pharynx, a foul set of teeth and a very tender left upper abdomen in the region described above.

A hypodermic of 1/6 of a grain of morphine was administered and an ice bag placed on the abdomen. After about forty (40) minutes she had quieted down considerably. At that time the parotid gland swelling was not discernable.

The following morning the patient felt considerably better, although she had vomited once and still had a very tender upper abdomen. Her husband stated that he had had difficulty in arousing her from a sort of stuporous sleep earlier that morning.

Her temperature was 103.2° and her pulse 120°. She showed a slight swelling of the parotid gland that morning. That evening I was again called because of severe epigastric pain. Upon my arrival I found the pain somewhat abated, but the patient had a severe occipital headache and at times was irrational, having a disorientation of time and place. Her temperature was 101.2°.

The patient was lying on her right side with her head slightly drawn back. The left parotid swelling was very much greater than it had been that morning. Examination revealed, pin-point pupils which re-acted to light, 3 plus neck rigidity, a positive Kernig sign, knee and ankle jerks hyper-active (3 plus) with a negative Babinski and negative clonus. Muscle power was equal and strong.

There were no changes in cutaneous sensation. Urinalysis revealed normal urine except for a trace of acetone in a voided specimen.

The third day of the illness showed a greater neck rigidity and the patient complained of soreness of the muscles of the back, arms and legs. She lay most of the night and day in a stupor from which she could be aroused with some difficulty. That morning a large light colored stool was reported, towards evening a hypodermic was again required to control the abdominal pain in spite of the fact that she had been given allonal tablets at regular intervals during the day.

Little change was noted in the patient's condition during the following two days. The epigastric pain required hypodermics in addition to the other sedatives on each evening.

Stool examination on the 4th and 5th days showed large, fatty stools with a peculiar rancid, fat odor. The urine was normal on repeated examination. After the 6th day the right parotid became involved and during the time when the swelling was the greatest, the pancreatic soreness seemed to be greater, although stools rapidly became of normal consistency and appearance.

Spinal puncture was first done on the 4th day. The cerebral symptoms had already begun to subside but apparently the release of pressure relieved the headache somewhat. The following punctures were made as a matter of record and no apparent benefit to the patient resulted. The following is a record of the findings in four spinal fluid examinations:

				Cell	Count
Date Disease	Amt. Remvd	Pressure	Turbity	No.	Diff.
4th	8 cc	Increased, slightly.	Slightly turbid.	180	-
6th	15 cc	Increased	"	150	80% polys.
9th	15 cc	"	Clear	100	76% polys.
26th	5 cc	Normal	"	8	-

The convalescence was uneventful but slow. The patient noticed a general weakness for some weeks afterward although recovery was complete without residuals.

I wish to call attention here, that the cerebral involvement of this case showed mainly a meningitic train of symptoms, in contrast to the following case:

CASE NO. II

Male, age 8 years.

The parents noticed a swelling of both parotid glands and a slight fever on Feb. 26th. The following day a physician was consulted and the usual treatment for mumps instituted. The patient seemed to do quite well until the third day of the disease when he had a severe headache which he could not localize, saying it hurt all over his head. He had had several attacks of somewhat forceful vomiting during that day.

Careful examination failed to reveal any findings in addition to the local manifestations of mumps. The temperature was 100° and the pulse 118; neurological findings were negative. A fairly satisfactory view of the eye grounds failed to show any abnormality of the optic disc or retina. Urinalysis was negative with a normal specific gravity.

Large doses of salicylates failed to relieve the head, although some comfort was obtained by the use of the ice bag, and finally paragoric was given with equal parts of glycerine, with only slight relief of pain.

The following morning the parents reported a poor night with considerable head pain and restlessness, the patient seemed a little better at that time however.

Shortly after noon the child had his first convulsion. It lasted about five minutes during which he became somewhat cyanotic. The head was drawn back, the extremities and trunk became rigid for a few seconds, after which short, quick contractions developed. The first convulsion proved to be the worst; however for eighteen (18) hours the child developed tonic spasms from every ten (10) to every thirty (30) minutes. During this time he knew no one, cried out as if in pain at times and often threw himself about violently. A prominent "tache cerebral" appeared on his trunk and extremities. His temperature varied from 100° to 102.8° R., his pulse from 90 to 100. The parotid swelling became very prominent. Sphincter control was normal. After eighteen (18) hours the patient's convulsive siezures came less often and gradually died away, the stupor, interspersed with periods of restlessness in which he threw himself about and cried out, persisted however, for several days.

Neurological examination revealed: A normal pupillary response, no ocular paralysis, an absence of Hoffman, Babinski, and Oppenheim reflexes and no clonus. There was, however, a diminution and finally a total absence of knee and ankle jerks as well as triceps and biceps jerks.

Spinal puncture was done the first evening of the convulsions and 10 cc of a slightly turbid fluid under a somewhat increased pressure was withdrawn. Cell count was 186 with a 72% polymorphonuclear. The release of pressure apparently decreased the number of convulsions for a short period and also the restlessness. This proved to be true in the following punctures to a greater degree probably because more fluid was withdrawn. The following is a resume of the spinal fluid findings:

Day of disease	Amount removed	Turbidity	Pressure	Cell Count	
				No.	Diff.
1st	16 cc	Slightly turbid	Increased	186	72%
2nd	15 cc	" "	"	206	78%
4th	18 cc	" "	"	200	80%
5th	20 cc	" "	"	150	72%
7th	15 cc	Clear	"	168	—
21st	3 cc	"	Normal	6	—

Repeated stained smears failed to show the presence of any organisms in the spinal fluid.

The irregular throwing about of the arms and legs gradually developed into a definite writhing, squirming twist of true dystonic movements. Several days of this lasted but finally the movements no longer involved the trunk. The child suffered from irregular, uncontrollable movements resembling a chorea for three (3) weeks, before they completely subsided.

After the stupor cleared up the patient knew his surroundings and seemed to be perfectly clear mentally. Tests with letters and numbers showed him to be capable of doing everything mentally that he had done before his illness. His speech was slow and thick and of the scanning type, and at times was explosive.

The finger-finger, finger-nose and heel-knee tests were performed with very great difficulty and equally as well with the eyes closed as with them open.

The course of the disease has since been, one of very slow but continual improvement. In about eight (8) weeks the patient was able to walk alone, prior to this time, when supported, the patient walked with a steppage gait. This has entirely cleared up, but under excitement the patient reels slightly. He has fairly good coordination in the movements of his hands but cannot write as well as he did.

As is often the case in epidemic encephalitis this child seems to have developed a change in personality, although this appears to be getting some better. He took especial delight in biting, kicking and pinching anyone within his reach, and also shows a tendency to fly into a rage when he is not allowed to do as he wishes. Whether or not this is due to pathological change or merely to over solicitous care during his long illness is not yet possible to say.

The type of ataxia, the absence of pyramidal tract signs, the loss of deep reflexes and the dysenergy with a gradual development from hypertonus to hypotonus, seem to point to the major part of the pathology in this case being in the cerebellum. The dystonic and choreform movements apparently arise from pathology in the corpus striatum.

The involvement of the central nervous system by mumps has been reported many times in the French literature but much less often in this country. Maximovitch in 1800 first reported the pathological findings as determined by autopsy. He found the brain surface edematous, the sulci filled with a semi-fibrous exudate and hyperemia of the spinal cord and brain stem.

In reviewing those cases reported, it seems that the following characteristics of the condition are the most common.

1. The incidence varies with epidemics.
2. The symptoms vary a great deal apparently dependent upon the part of the nervous system involved the greatest.
3. Headache, nausea and vomiting, (usually projectile) convulsions and stupor usually are prominent symptoms at the beginning.
4. The more prominent later symptoms are photophobia, signs of meningigal irritation, deafness, speech disturbances, aphasia, hemiplegia, Argyl-Robertson pupil and psychic disturbances.
5. Bradycardia is common.

The spinal fluid findings are quite uniform. At first glance the fluid will be thought to be water clear, careful examination, however, reveals a slight turbidity.

The pressure is unifromly slightly increased and the cell count ranges from 50 to 1500. The differential count varies from 60 to 80% polys. The blood leucocyte count is usually normal. The few necropsies that have been recorded show a marked congestion of the brain substance with a serous meningitis.

It has been suggested that perhaps there was a raise in pressure and cell count in uncomplicated cases of mumps. Mond in 1902 did spinal punctures on eight (8) cases of simple parotitis and found a slight increase in six (6) cases. The increase of cells being lymphocytes. Nobecourt after studying the spinal fluid of a number of cases finds an increase in only an occasional uncomplicated case. Massery, Tochman and Lues report a higher incidence in raised cell count in the uncomplicated cases. The cell counts were not as high, however, as in those with frank cerebral involvement.

Prognosis is as a rule good. Residuals have been reported, the most common of which is personality change, permanent deafness, hemiplegia and monoplegia. Most satisfactory results seem to be observed after spinal drainage.

SUMMARY

1. Brief report of incidence of complications (10%) in severe epidemic of mumps in Western Nebraska.

2. Report of two cases of epidemic parotitis with central nervous system complications, one of which also showed acute pancreatitis at the same time.

3. A brief review of the literature.

DISCUSSION

A. L. COOPER, M. D., (Scottsbluff): There is nothing I can add to this excellent paper. I wish to emphasize one point illustrated by these complications of the central nervous system and the pancreatitis, in mumps, a disease we are wont to consider of little importance.

The possibility of complications and sequelae in the acute infectious diseases, is something too many of us overlook, or ignore. Yet these may result in temporary or permanent damage of greater or less degree, and be the foundation of much trouble later in life.

It will be important to follow these individual cases and record the degree of complete recovery.

THE INVESTIGATION OF STERILITY*

HAROLD S. MORGAN, M. D.,
Lincoln, Nebraska.

In the short time available it is, of course, impossible to present all aspects of the problem of the childless marriage, nor to dwell at length upon the individual causes of sterility. It is my purpose, then to present a brief summary of the problem as we see it today with some observations on the systematic investigation of the sterile marriage.

Fundamentally, all cases of sterility are to be divided into two main groups, absolute and relative. The absolute sterility group will be found to include two main conditions, a failure of oogenesis or spermatogenesis or conditions inhibiting the meeting of sperm and ovum. The relative sterility group on the other hand includes those cases wherein spermatozoa and ova are produced but are deficient in number or present in abnormal forms; or where the male and female elements are not entirely prohibited from meeting but difficulties are found in their paths.

Meaker(1) points out that sterility in a given mating is not due to a single cause, but rather to a summation of causes operating in both male and female that depress the level of fertility below the threshold of conception. He(1) further points to the fact that a plurality of causes is operative in the absolute group to no less a degree than the relative group, save that in the first group one factor, i. e., salpingitis plays a predominating part. These causes are constitutional as well as local. The constitutional factors in both male and female fall into three well defined groups; endocrinopathies, focal infections and nutritional disturbances. The latter are mostly due to protein starvation or lack of vitamin E.

In accepting Meaker's point of view one is impressed with the fact that herein lies the explanation of many cases of sterility in which no information could be obtained after the employment of older diagnostic measures and that the results obtained are superior to the results of other investigators.

Other authors of recent literature deal with other phases of the problem. Moench and Holt(2) have recently presented a study of sperm morphology in relation to sterility, which gives us a clearer concept of the problem of abnormal spermatozoa. They point out that sterility is oftentimes nothing more than impaired fertility. By study of the stained smear of semen they have tabulated and described 50 abnormal sperm types. From these studies, they believe that in normal semen the abnormal sperm heads do not exceed 19 to 20% and that when abnormal types of sperm heads reach 20 to 23%, impaired fertility can be assumed. Macomber(3) has offered some studies on ovulation, Mazer and Andrusier(7) present evidence that 16 out of a group of 37 regularly menstruating women were subject to anovular menstruation. Other writers have stressed the importance of the reaction of the vaginal secretions as to acidity or alkalinity, and of cervical secretions as to reaction and viscosity.

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*Read before the Lancaster County Medical Society, November, 1931.

Since the work of Rubin of New York in 1920, diagnostic aids have come to our hands in the form of the insufflation of the tubes, commonly called the Rubin test, while Stein of Chicago has perfected the technique of lipiodol injections to determine the point of closure of the tubes.

From this brief resume it may be seen that the problem of the sterile union is not a simple one and that the proper investigation of the subject is complex and must of necessity call all the diagnostic aids into play. An orderly investigation and summation of the facts thus obtained must perforce, precede any line of treatment.

It is perhaps trite to remark that history and physical examination here, as elsewhere in medicine are the cornerstones upon which the diagnosis must be built, always bearing in mind that instead of one patient, we are dealing with two and that the investigation shall be as complete for one as for the other. In order that completeness may ensue, certain sterility clinics are composed of three men, a gynecologist, an internist and a urologist. Such a combination is ideal and is not as impractical as it may sound. Certainly the internist can offer more expert opinion in regards to thyroid disturbances, pituitary disfunction, foci of infection and malnutrition, both in man and wife; the urologist, more expert opinion concerning abnormalities of the male, such as orchitis, testicular hypoplasia, prostatovesiculitis and sperm abnormalities than can the gynecologist; conversely the gynecologist is better fitted to estimate the local female factors than the other two.

But whether or not such cooperation does exist, the fact remains that careful history and physical examination must disclose the presence or absence of constitutional and local factors known to have a bearing on the problem of sterility. Basal metabolic rate determinations should not be omitted if the slightest suspicion exists of endocrine disturbance.

After the above data are observed and recorded, a thorough pelvic examination is done, recording the findings in detail for later study. The depth of the vagina, the condition of the cervix, its length, shape and position. The size and shape of the uterus, its movability and the presence or absence of tenderness are significant findings. The tubes and ovaries must be accurately palpated and the presence of infection ruled out before proceeding with the next step of the investigation.

At this point in the examination it is well to stop, giving the patient a definite date for a return visit for post coital examination and tubal insufflation. This visit should be between the 4th and 7th day after the period. Post coital examination is so important that no advise should be given or therapeutic steps originated until the results of this procedure are at hand.

The procedure that I am about to outline is a modification of that suggested by Cary(4) and is quite applicable to private office practice. The patient is told of the contemplated procedure and is asked to present herself at the office within 3/4 hour after having had intercourse. Prior to the act the bowels and bladder must be emptied and the patient must not go to stool after intercourse. She is instructed to immediately place a vulvar pad over the introitus and remain in dorsal recumbency for 30 minutes before coming to the office.

1. The first step in post coital examination then is to inspect the pad and the vulva to estimate the amount of semen lost, as many women have almost a complete loss of the seminal ejaculation after assuming the upright posture. It is well for the sake of completeness and for later study to record the data obtained step by step.

2. A speculum is next inserted in the vagina and the amount of the seminal pool is estimated, variously estimated normally to be between 30 and 40 minims, and a portion of it taken up with a warm pipette and transferred to a warm watch glass or a slide that can be kept warm. The seminal pool should be alkaline, if the pool is small, it may be acid and the mobility of the spermatozoa be impaired. If the pool appears normal in quantity and its reaction is acid, the chances are that the spermatozoa will be inactive. When it is alkaline, a microscopical examination presents a fair idea of male fertility. One notes the presence or absence of abnormal forms, dead forms and the relative number.

3. With a special cannula, a bit of the mucous from the region of the external os is taken carefully and placed on a warm slide. If immobile forms are demonstrated or the motility is markedly lessened, the mucous is probably hostile.

4. With a second cannula, a portion of the mucous from the cervical canal near the internal os is removed and placed on a warm slide and covered with a cover glass. Normally only a few vigorous, actively motile long tailed spermatozoa will be found. If none are found, or their action is sluggish, one may postulate that the spermatozoa have encountered difficulty in their upward

migration and that this difficulty is due either to impaired vitality or excessively tenacious or acid mucous. It is not uncommon to find the spermatozoa making rhythmic motions but without making forward progress. This usually indicates abnormal viscosity of the mucous, particularly if the majority of the spermatozoa are so affected.

5. The fifth and last step in post coital examination is the utilization of the remainder of the first specimen, for a stained preparation. In this study abnormal forms are estimated.

If it has been decided from reviewing the evidence that an acute or subacute infection of the tubes is not present, the Rubin test may be employed. This test, simply stated, is the passage of a known volume of gas under absolute pressure control through the tubes via the cervix and uterus. If the gas escapes from the tubes we can say at once that there is no evidence of tubal block and we must review and study our previously obtained data to determine the cause of the sterility. If on the other hand, there is no escape of gas into the abdomen, we assume that the tubes are blocked, either by mucous, by infection or through developmental or acquired defect, or by spasms produced by gas under too much pressure. To provide against this later possibility, the test should be preceeded by administration of atropine or if this is not effective a second test under anaesthesia should be done. One may stop at this point, or may proceed further in the investigation by the use of lipiodol and roentgen ray or by the method outlined by Stein (5), wherein the pneumoperitoneum as described by Peterson(6) is combined with lipiodol injection in the pelvis and its contents visualized.

There is no doubt, but that a lipiodol study in the case of closed tubes is of great interest and that in certain cases, the use of lipiodol gives important data, but it should be limited to the occasional case, rather than be used routinely. When the Rubin test with CO_2 under manometeric control gives inconclusive evidence or is unsatisfactory, then lipiodol should be used. When it is used, it should be used under manometric control and under direct fluroscopic observation, with serial plates taken 5-10-15 minutes after injection with the cannula *in situ*. Additional plates may be taken in 18 or 24 hours.

As has been mentioned before, we are indebted to Rubin for our present knowledge of tubal insufflation. Certain indications and contra indications for its use have been developed until now it is a safe procedure and can be carried out in office practice.

In giving you the contra-indications for utero-tubal insufflation, I can do not better than quote from Rubin(7).

> "1. The presence of infective secretions caused by bartholinitis, urethritis, vaginitis and cervicitis.
> 2. Bleeding from the genital tract.
> 3. Inflammatory pelvic masses.
> 4. Pelvic tenderness without palpable masses.
> 5. Physiologic or pathologic pregnancy."

In addition to this list of contra-indications, it is necessary to state that the optimum time for utero-tubal insufflation is from the fourth to the seventh day after cessation of the period, for at this time the mucosa is regenerated, it is still flat and there is a minimum of secretion. The endometrium forms a protective layer over the blood sinuses and the danger of embolism and endometrial dislodgement is reduced to a minimum.

Rubin further warns, that vigorous attempts to introduce the cannula into the cervix may result in bleeding. If this occurs it is well to defer the test. Currettage may never be done prior to insufflation or hysterography.

SUMMARY

A brief resume of the more important phenomena of sterility has been given, with some description of the technical procedures embodied in the investigation of sterility, in the hope of calling attenton to fact that sterility is a complex question involving both constitutional and local disorders in both partners and that accurate and systematic investigation of these problems is necessary before good results are obtained in the treatment of the sterile union.

1. Meaker: Am. Jr. Obst. and Gyn., XX, 6, 749.
2. Moench and Holt: Am. Jr. Obst. and Gyn., XXII, 2, 199.
3. Macomber: Am. Jr. Obst. and Gyn., XIX, 6.
4. Cary: Abstr. Year Book, Obst. and Gyn., 1930.
5. Stein: Am. Jr. Obst. and Gyn., XXI, 5, 671.
6. Peterson: Surg. Gyn and Obst., XXXIII, 154, 1921.
7. Mazer and Andrusier: Am. Jr. Obst. and Gyn., XXII, 1, 46.

THEN HE HEARD

Doctor Nobbs rubbed his hands professionally.

"There you are, sir," he said to his patient: "My bill for improving your hearing comes to $25."

The patient shook his head.

"Did you speak, doctor?" he said. "If so, I didn't hear a word what you said."

"H'm," sniffed the medical man, "perhaps I'd better make it $10."

"That's better, doctor," said the patient readily enough. "That's about right."

REPORT OF THE A. M. A. SESSION AT NEW ORLEANS, 1932

BENJ. F. BAILEY, M. D., DELEGATE,
Lincoln, Nebr.

The last two cities, meeting places of the American Medical Association, have seemed especially fitting selections and admirable in history and accomplishments. Philadelphia is the city where Benj. Rush placed his stamp upon the world as one highly educated in medicine in Philadelphia, Edinburg, London and Paris. He was an outstanding medical man of that day and even extending to this day. He was a patriot, a soldier, the founder of educational institutions and a statesman. Doubtless his influence had much to do with Philadelphia becoming a great center of medical education with its State University, and its several colleges. I remember well Richard Morton Pancoast and DaCosta and their brilliant lectures in the old Pennsylvania and Blockley hospitals, with their wooden floors, cracked ceilings, odors that mounted to heaven in the days of antisepsis, not asepsis, while the operative field was dimmed by the carbolized spray of Lister.

Last year the colleges, the hospitals and the sanitary surroundings, the medical education and culture could not be surpassed while the stern persistent conscientious work of the Philadelphia profession seemed but the maturity of the influence left by Benj. Rush.

This year in the splendid city of New Orleans with its historical setting, with the fascination of the old French quarter and the beautiful old courtyards that still remain and the surroundings where Andrew Jackson won his honors and the presidency. So much might be said of it but to us nothing is more interesting than Tulane University, now a complete university but the outgrowth and development from the Medical College of Louisiana founded in 1834. The development of this institution has been truly wonderful. They have a library of 89,000 volumes and in the scientific exhibit of the American Medical Association they demonstrated by roentgen diagnosis the effect of splanchnic block and the effect upon the same of certain drugs as for instance glucose and hypertonic salt solution. It was thoroughly demonstrated that hypertonic salt solution intravenously tends to a moderate degree of splanchnic block, that glucose has a serious trend to this same block, but if we use glucose in connection with insulin we have none of this trend and the logical minds of our profession will readily see where the scientific investigation may lead. The same University demonstrates the prevention of reformation of serous adhesions by means of digestive ferments. We were given by the same University most convincing evidence of the effect of heat and cold in peritonitis and an exhibit showing experimental studies of different commonly used sclerosing substances.

These just to indicate some of the work being done in New Orleans, but the whole scientific exhibit last year and this year thoroughly proved to me and I believe to all the tragedy to the scientific world that these wonderful exhibits and opportunities for study should after five days be but a matter of history to the profession. This society and the medical profession at large could not do a more wonderful and profitable thing than to provide at the home of the American Medical Association for a permanent scientific exhibit, this exhibit though permanent, to be changed and modified of course as advancements, new discoveries and developments are made. The more we learn the less we know. Every advance reveals new mysteries and new uncertainties. A half day would not provide time enough to present to this Association the interesting observations and reports from this meeting but the resume that shall keep us in touch with the activities of our organization is a goal at which I shall aim.

From the report of the Secretary in 1931 there were 159,109 physicians in the United States and its territorial possessions. On March 1, 1932, there were 99,470 members of the American Medical Association. A careful estimate that if physicians eligible for membership should all affiliate it would hardly be possible to exceed 110,000 members at any time within the near future. About 11,000 young men were in 1931, serving interneships. I note Nebraska reported April 1, 1931, 1,196 members of the State Association and March 1, 1932, 1,143 members, thus calling your attention to a slight decrease in our membership. The number of fellows enrolled on March 1, 1932, in the American Medical Association were 64,712, 224 less than on April 1, 1931. Of these 754 were removed from the roster because no longer eligible.

The Trustees made to the House of Delegates a detailed and interesting report. During the year the Bureau of Medical Economics was organized and has been active in a most efficient manner. The Committee on Foods has increased the scope of its work and is in a position to answer any inquiries from the profession. You know the Committee on Legislative Activities has been active and has been especially efficient in keeping in close communication with the Legislative Committees of the different state societies. The Association has taken over entirely the publication of the *Quarterly Cumulative Index Medicus.* The limited and insufficient capacity of the building of the American Medical Association was reported and is only too evident. Fellowship and subscription income in 1931 was $3.600 less than 1930. The average income was $23.000 less. The gross income for 1931 was $47.000 less than 1930. while the operating expenses for 1931 were $27.000 more than in 1930 and there was an increase of $119,000 in association and miscellaneous expenses largely due to "depreciation in the values of real estate. building and physical equipment, due mostly to economic conditions."

"During 1931 the Journal provided more than 4.300 pages of reading matter, the equivalent of 14 average books one-half the size of the Encyclopedia Brittanica. During 1931 the Journal printed 4,912,439 copies with a weekly average of 94.470 copies. Mailing list of January 1, 1932. carried 90.717 names, a decrease of 2.380 during 1931. During the year 14.678 names were added to the mailing list and 17,058 were removed on account of death. ineligibility. and nonpayment of subscription or fellowship dues."

The *American Journal of Diseases of Children,* the *Archives of Surgery,* the *Archives of Otolaryngology* and the *Archives of Ophthalmology* produced incomes larger than expenditures. Other special journals were published at a loss, for the group excess of expense over income $21.397. The library was expanded by taking over the space formerly occupied by the Assembly room. I wish to call your attention especially to the package library service which furnished 2.452 package libraries to physicians during 1931. The number in 1930 was 2,067. 20 per cent increase. In research and preparation of papers this library is open to members of the Association on application. Nebraska has recorded 1,785 physicians in the state. Of these. 1.070 received the Journal. or about 60 per cent. *Hygeia* which we believe is having a definite influence in regard to health subjects upon the laity. a little more than paid its cost of operating. The Directory gave a net profit of about $3.700. The net earnings of the Cooperative Medical Advertising Bureau was about $31,000. a little more than in 1930. Of this $14.250 was paid to the state Journals proportionate to the amount of advertising secured, being practically dividend payments.

The Committee of Pharmacy and Chemistry has continued to protect the profession and the people and is receiving more and more the recognition of the legitimate and reliable manufacturers of pharmacals while the Committee on Physical Therapy, newly constituted. will supply another and necessary protection to our profession and to the people. The members of the Association can secure from the Council reports concerning intravenous therapy and the safe and unsafe and unnecessary drugs to be used in this mode of treatment which will certainly protect them from falling too easily to the commercialized detail man. The annual reprint of Counsel reports on Pharmacy. Chemistry, new and nonofficial remedies and many other interesting and valuable reports may be secured from the central organization.

The Therapeutic Research Committee has a large number of workers who have received moderate grants of financial help and which are giving to us continually new light. A most important work of the Council has been a report entitled "Regulations to govern advertising of Ultra Violet Generators to the public only," looking to the adoption of regulations for the control of therapeutic claims for light therapy. Periodic health examination have been encouraged, and work advising as to health problems in education, and for 1932 recommended for consideration, (1) healthful physical education activities for school children. (2) cooperation of home and school for the health of school children. (3) healthful summer activities for school children, (4) safety for school children, (5) revision of report. "The deafened school child," (6) consideration of a project relating to school ventilation.

To me as president of a board of education and member of a city recreation board this work is intensely interesting as I know it will be to many others of our profession who are in some way associated with these same activities. The problem is to give proper care to and investigation of the health of our children. at the same time holding in mind the economic necessities of the day while we avoid the extreme fads of the over-enthusiastic.

The Trustees report with pleasure a verdict from the Association in the Norman G. Baker. Muscatine, Iowa, suit. This was an expense and a trial necessary not so specially for the protection of the Association as of the people.

At the first meeting of the House of Delegates your delegate, Dr. Fouts, was appointed to serve on the Committee of Rules and Order of Business. The speaker urged a report to the various state associations of the activities of the House that "national unity might be attainable by this instructive and guiding knowledge." The address of President E. Starr Judd before the House of Delegates suggested that as the profession is confronted with the problem as to what is the best plan for giving adequate medical service to all the people, organized medicine should have a more definite plan for studying suggestions and problems. I am of the impression and I think the House of Delegates was of the impression that this should be and is the work of the Committee on Medical Economics. He also mentioned that the five year committee on the costs of medical care will probably recommend community health taxes. He suggests that the report of this committee will probably need to be carefully studied by the members of the medical profession and says:

"Caring for the sick by contract with business concerns and societies has been suggested and tried. A study of this problem is being carried on by the Bureau of Medical Economics as well as by some state societies." He expresses the hope that finally it will be possible to make some definite statement and says, "but it is not conceivable to me that this method of practicing medicine would help to solve our present problems", and he adds, "it is carried too far in localities and the results are not wholly satisfactory to the patient." He also asserts quite strongly as follows, "I do not believe that there are too many physicians, nevertheless I do think that in order to give the people the best care, the actual practice of medicine must be kept in the hands of physicians."

In this statement he refers to the tendency in certain communities to turn over cases to nurses, midwives and technicians. He stated that he believed that he saw clearly a better relationship between the physician and the public which he believed was aided by radio programs and health talks, and he said very definitely, "organized medicine must do everything possible to escape having the function of preventive medicine taken over exclusively by the government." He suggests the continuation and increase of graduate training and believes recommendation should be made looking to the establishment of proper qualifications of physicians who wish to engage in special practice. He states that the medical profession is willing and anxious to see that the best medical attention possible is provided for the care of war veterans. It wants them to have exactly the same care that all other orders of society are given. It does not want them to be pauperized and placed in hospitals when they are not sick. He said: "It seems to me that the federal government has built enough hospitals. There are many unoccupied beds in civilian hospitals that might well be used in the care of veterans who are sick."

Dr. Fishbein introduced Dr. Paul Wolff of Berlin who brought to us the greetings of organized medicine of Germany and who lectured later upon the subject of "The Treatment of the Narcotic Habit."

Dr. H. H. Shoulders of Tennessee presented the following resolution on the care of veterans. I am sure you are all familiar with the recommendation of Dr. Shoulders which in brief is that an amendment to the World War Veterans Act of 1924 and amended in 1926 and 1930, striking out the following words:

"The Director is further authorized so far as he shall find that existing government facilities permit to furnish hospitalization and necessary traveling expenses incident to hospitalization to veterans of any war, military occupation or military expedition, including those women who served as army nurses under contracts between April 21, 1898, and February 2, 1901, and including persons who served overseas as contract surgeons of the army at any time during the Spanish American War with honorable discharge, without regard to the nature of their service or their disabilities."

He then recommends in brief that anyone who served ninety days or more of actual service shall be entitled to the following disability benefits: (a) Cash benefit of $12.50 per week during any period of disability from any disease or injury. (b) Hospital benefit of $4.00 a day during any period of hospitalization, proof of such necessity includes the supporting statement of an attending physician of good standing and repute and provides that no cash benefit and no benefits under this section shall be paid for any disability resulting from willful misconduct.

The Directors of the Veterans Bureau shall furnish to each living veteran who may be entitled to benefits under this section of disability a benefit certificate reciting the individual's position in regard to benefits of a veteran. The resolution recommends the cessation of the hospitalization of veterans with nonservice connected disability and that the veteran himself shall have the right to select his physician and hospital subject to the reasonable regulations and approval of the Veterans Bureau. This in brief.

This was referred to a reference committee and finally to the committee of legislative activities with whom it was left by the House of Delegates. A resolution was introduced by Gorseline of Michigan in which it was resolved that the Board of Trustees of the American Medical Association be requested by the House of Delegates to provide such additional increase in budget and personnel as may be required by the committee of medical economics to secure important information at the earliest possible minute.

Concerning workmen's compensation, health insurance and contract practice: This was reported on by the Board of Trustees to the effect that proper provision will be made for carrying on the work of the Bureau and also was left with the Trustees.

A resolution was presented on the appointment of a committee to study birth control. On motion, seconded and carried, the resolution was laid on the table for consideration at the executive session and then in the executive session was recommended for rejection and was in turn rejected by vote of the House.

Dr. Hines of South Carolina presented a resolution requesting reduction in the subscription rate of the Journal from $7.00 to $5.00 which was referred to the Board of Trustees. The Board of Trustees reported that it is inexpedient to reduce the subscription and the House adopted the resolution without discussion.

A resolution was presented looking to the securing by the American Medical Association of full information concerning the Cuban socalled health and insurance societies. This was referred to the Board of Trustees for their consideration. A resolution was presented to the House, by the House of Delegates of the California Medical Association that it requests the House of Delegates of the American Medical Association to consider the advisability of recommending to the Board of Trustees the publication in the form of annual volumes of the Medical Legal Digests as printed in the Journal of the A. M. A. and that a copy or copies of such volumes as approved by the House of Delegates and Board of Trustees of the A. M. A. be sent each year to each of the constituent state associations. The Board of Trustees reported favorably upon this but thought the books should be furnished to the state associations at cost.

At the second meeting of the House of Delegates 149 delegates had filed satisfactory credentials.

A resolution introduced concerning the effect of doles and federal health and sick benefit appropriations was referred to the Board of Trustees. Dr. Sullivan of New Hampshire submitted an amendment to the constitution which should read as follows—"The House of Delegates is composed of delegates elected by the constituent associations and by the sections of the scientific assembly and of delegates from the medical department of the army and navy and the Public Health Service and Veterans Bureau appointed by the Surgeon General of the respective departments and by the medical director of the Veterans Bureau. The trustees, the ex-presidents of the association and the members of the several Counsels shall be ex-officio members of the House of Delegates with the right to vote, provided that members of the Counsels who are also elected delegates may exercise all the rights of elected delegates." Under this proposed amendment the medical director of the U. S. Veterans Administration would be a member of the House of Delegates. The reference committee to which this resolution was referred reported that they believed that the designation of any one individual, regardless of qualifications, as a member of the House of Delegates, violates the democratic principles on which the House of Delegates is organized. They further reported, and please note this—that your reference committee further believes that the fact that only 457 or 35% of the 1291 physicians who are members of the U. S. V. B. have membership in the A. M. A., that only 257 of them or 19%, are sufficiently interested to become Fellows of the A. M. A., and that these members are distributed among 41 constituent organizations, furnishing sufficient reasons for denying special representation in the House of Delegates and, therefore, your reference committee disapproves the proposal to amend the constitution. This recommendation was adopted unanimously by the House of Delegates.

The by-laws were so amended as to hereafter designate the section heretofore named under Diseases of Children to the section on Pediatrics.

The speaker presented Gen. R. V. Patterson, Surg. Gen. of the U. S. Army who addressed the House, saying in brief that he was here today through the courtesy of the officers of the House of Delegates for the purpose of bringing to their attention the action of the body last June in Philadelphia which if it should remain on the records unchanged would result in doing great injury to the medical education program of the medical department of the army and have an effect which you would not desire on the medical profession of the country itself, viz., the army medical library commonly called the Surgeon Generals Library, was started by Surg. Gen. Lovell in 1818. It amounted to little until after the Civil war. At that time there were from 500 to 600 volumes in the whole army medical library. At that time Surg. Gen. Barnes allocated $80,000 of unallocated funds to the library for the purchase of books. Col. John S. Billings became librarian of the Surg. Gen. Library and under him it had an unprecedented growth and became one of the great libraries of the world. At the present time it is probably the largest collection of medical works in the world. The medical department of the army was in existence for seventy odd years before we had an A. M. A., and the library was started thirty-five years before the A. M. A. was organized in 1847. It is now a lending library and 1,000 volumes were sent out to 2,308 libraries during the last year, so that one who wishes to consult a book need not come to Washington.

Your resolution went through hastily. As long as it remains on your records it has potential power to do us injury which I know you do not intend to do.

I hope that someone will get up and move for a recession or rescinding of the action that you took last June as it will do us a great deal of help. Do not make any mistake, that if it becomes incorporated in the Library of Congress you will never be able to get books from it. You will have to go to the library to see them.

The speaker referred the address at the request of Gen. Patterson to the reference committee on medical education for consideration and recommendation. In response to this said committee reported the following resolution:

> Whereas, at the annual convention of the A. M. A. held in Philadelphia in June, 1931, the House of Delegates passed a resolution advocating that when the army medical library has to be moved to a new site it be placed adjacent to the Library of Congress; and whereas, at that time the House of Delegates did not have before it complete information concerning the status of the army medical library and the plans of the War Department with respect to the library; and whereas, that information being now fully available, it is evident that any departure from those plans of many years standing with respect to the future location of the army medical library will seriously interfere with the proper development of the army medical center in Washington, and will also render it less useful to the medical profession of the country as a whole, that a resolution by the House of Delegates of the A. M. A. in convention assembled be that the resolution of the House of Delegates in June, 1931, at Philadelphia with reference to the location of the army medical library be and is hereby rescinded; and be it further resolved that a copy of this resolution be sent to the President of the United States, the President of the Senate, the Speaker of the House of Representatives and the Secretary of War, and we recommend that the House of Delegates cooperate in obtaining a suitable fireproof building to house these precious volumes.

The Secretary presented Dr. T. C. Routley, secretary of the Canadian Medical Association, who brought to us the greetings of the Canadian Medical Association and an invitation to some day meet in Canada with them.

Dr. Fouts read the report of the reference committee on rules and order of business. They especially recommended that the present principles of medical ethics being adequate, should be strictly adhered to in dealing with patents and purposes. The report was adopted.

The secretary was instructed to communicate with the Women's Auxiliary and express the appreciation of the House of Delegates for the activities of the Auxiliary.

A resolution was passed that "physicians on the staffs of hospitals approved for interne training by the Council of Medical Education and Hospitals shall be limited to membership in good standing of the A. M. A." This applies to all hospitals except federal, state, county and municipal over which we have no authority. It was recommended that a permanent committee be appointed to cooperate with the Bureau and Councils for studying the medical economic programs in European countries as well as our own country. This recommendation was made to the Board of Trustees from a suggestion made in the President's address. The House of Delegates heartily endorsed the statement in the President's address that all medical work be done by medical men. After numerous conferences between members of the American Legion, representatives from the American Hospital Association and representatives from the A. M. A., a tentative basis of agreement was reached.

> 1. That the Veterans Hospital building program should stop, except for the erection of hospitals for the care of patients suffering from nervous and mental diseases and tuberculosis, and all building plans should be modified as far as possible to meet the future needs of the civilian population by location and distribution;
>
> 2. That a modification of veterans legislation should be asked allowing that veterans be taken care of in the non-federal hospitals at home and that all acute surgical conditions should be so cared for. At a further conference in Washington Dr. Olin West spoke from the standpoint of the A. M. A., urging the stopping of building of federal hospitals and the use of non-federal hospitals of the country for the care of veterans. He felt that the government should take care of the veterans disabled because of service connected injuries or illnesses, of nervous and mental and of tubercular cases, and possibly of some other chronic cases. He also expressed the opinion that the idea of getting service in local institutions for emergency cases might be adopted, but he urged that the man who is able to take care of himself should do so and be made to do so and the government should not pauperize its citizens by giving to those who are able to provide for themselves.

The reports of the American Legion expressed their opposition to the insurance plan of Dr. Shoulders. As a result of this latest conference in Washington the following tentative agreement was reached, in brief:

> 1. No available statistics on which a comparison could be made between the cost of care and non-federal hospitals for the same class of cases. This should be studied.
>
> 2. It was agreed an emergency case in the opinion of this committee, is a case where those needing medical or hospital service which cannot be furnished by veterans hospitals promptly enough to prevent avoidable danger to the health and life of the patient or to prevent a lasting disabling condition.
>
> 3. It was recommended that the hospital program of the American Legion having to do with nervous, mental and tuberculous cases and service connected cases be approved, including extension of hospitals for these cases where necessary, it being understood, however, that the extension of such hospitals will not be used for the care of general medical and surgical nonservice connected cases.

The Conference authorized the appointment of a committee to draw up an amendment to the existing law to permit veterans to be taken care of in the home hospitals by their own doctors at government expense. It was recommended that committees be organized in every state consisting of representatives of state hospitals, associations, state medical associations, the state Legion, looking to the better cooperation among these groups. As a matter of fact the work up to this time has been judicial. educational and advisory. but it is believed progress has been made.

U. S. Senate File No. 572 is in a way a revival of the Shepard-Towner Bill only in that it applies to rural population and to towns under 50,000. The Shepard-Towner Bill did not so far as can be determined have any influence on maternity and infancy death rates. and this Bill should not be passed.

The House of Delegates set its approval unqualifiedly upon the report of the Board of Trustees and expressed its appreciation of the tremendous work which has been done by them in the last year, in the careful conservation of the funds of the Association, and the willingness and determination to spend the funds of the Association as liberally and as efficiently as conditions permit. but not with liberality uncontrolled by financial farsightedness.

Dr. Fouts presented a resolution urging the Council on Medical Education and Hospitals to give all possible assistance to small hospitals that their standards may be raised and their efficiency improved. Said resolution was adopted.

The next meeting place of the A. M. A. will be Milwaukee.

And so, members of the association, I have given you so far as possible in the time which I have permitted myself to take, a resume of the work done by the House of Delegates at the meeting of the A. M. A. in New Orleans. Only a little over a week between the adjournment of the A. M. A. and the meeting of our association and it would have been impossible to have given you a report in any degree as complete as the one we have given you had it not been for the splendid helpfulness of Dr. Olin West, who, that I might have them, sent me proof sheets and in some cases filled them out in his own handwriting. I cannot express too heartily my appreciation of the work of Dr. West for our medical profession. He is not only admired but he is loved by the entire organization.

And now permit me to say, I do not believe that we realize fully enough what the A. M. A. does for us and how much more it would do for us of we would make it possible by bringing ourselves in closer contact. Not a question in regard to scientific research, legislative work, medico-legal work, literary publications, lines of insurance, anything, but what an application to the office of the A. M. A. will give you information that you may desire. In turn, however, a closer cooperation between our county and state societies and our central organization, the A. M. A., will make it possible to become a power of influence in the legislature, in congress, and among the different organizations of people with whom we may come in contact and through whom we may influence the health, the morals, the laws of the people.

One hundred thousand members in round numbers of the A. M. A. I made a misstatement yesterday before the House of Delegates when I said that the members of the A. M. A. contacted probably five million or our people here. I meant fifty million. almost one-half our population. And that is only allowing them to contact and influence 500 people an individual. Can you for one minute let your vision portray to you the possibilities of such a contact, almost one-half our nation's inhabitants? And yet we complain of unjust laws toward us, fear of State medicine, wonder at the future, and stand in a daze. Let us review our possibilities. Let us stand fairly and squarely in the ranks, not selfishly for ourselves alone but through our influence for a stronger profession, a better country and a safer people.

DR. HERMAN VON WECHLINGER SCHULTE: AN APPRECIATION

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Dr. Herman von Wechlinger Schulte, 55, professor of anatomy and dean of the Creighton University School of Medicine, died on July 13 at his home in Omaha, Nebraska. Death came as a result of an acute heart attack after a critical illness of two weeks with a gallbladder infection. Previous to this complication he had been in poor health for three years with asthma and intermittent cardiac disturbances.

He was graduated with high honors as a Doctor of Medicine at Columbia University in 1902. After an internship rich in clinical experiences he entered the first stage of his public career as teacher of anatomy under the able leadership of Dr. George S. Huntington. From 1904-17 the anatomical halls of Columbia were permeated with the enthusiastic spirit of this young anatomist who like the great Huntington not only taught effectively and in master fashion but also did brilliant research. The older anatomists well remember the chivalry and intellectual perspicuity displayed by Dr. Schulte during his discussion of anatomical papers at the yearly meetings of the American Association of Anatomists, his stand on the origin of lymphatics and endothelium being his most salient defense.

Suddenly and to the great surprise of many of his colleagues Dr. Schulte accepted the call to a Professorship of Anatomy at Creighton University. Junior Dean for two years he in 1919 was appointed Dean of the Medical School, a position which he held until his recent untimely death.

It was at Creighton University that Schulte demonstrated his leadership in medical education. By example and exhortation he imparted to the minds of his students and graduates in the clinical fields the conviction that the justification and purpose of a medical school was not only its artistry and science but primarily its service and benefit to the community. Much as he loved his anatomic research he purposely caused it to be supervened by research in the social sciences because he felt that they could most effectively give to the medical profession its necessary sociologic consciousness and adjust it to the ever changing conditions of practice. In Schulte's opinion the time was fast approaching when a radical change would be made in the business end of medicine. Since under present conditions the only patients who could afford the best of medical treatment were the very rich and the poor who were given every consideration of charity, Schulte contended that the vast majority of people now neglecting or only partially attending to their ailments should be taken care of by state medicine or group insurance.

It was my good fortune to be with Dr. Schulte at Creighton University as the Associate Professor of Anatomy for two years. As a teacher his didactic lectures were highly informative, inspirational and provocative to independent thinking and study. Because of his exceptional mastery of the nervous system it was both an intellectual treat and feat to follow his delineation and description of the origin and termination of fiber tracts, his greatest delight being the presentation of the anatomy underlying the bottom of the acusticus internus, to wit the auditory nerve, its abutment and its branches. Once having heard this lecture one waited in suspense for that part of it dealing with the tractus spiralis foramenulentus. Who could ever forget the genius of Schulte after hearing his description of the ontogeny and phylogeny of the thalamus, its relay pathways giving affective tone to sensation, its lesions as compared with those of the globus pallidus? If neuro-anatomy was Schulte's forte one hesitates for a predication of his vast knowledge of gross, microscopic and developmental anatomy. I heard him lecture on the humerus for nearly two hours, the bone and chalk being his only support. His description of the temporal bone was a masterpiece of minutiae and was never completed in a single hour session.

To my repeated question "How did you ever learn all this anatomy?" Schulte made the succinct reply, "Cheer up, young man, it takes twenty years to become an anatomist". What a loss to teachers of anatomy that Schulte did not write the book on anatomy which he had in mind and which he would have written had he retained his one time vigorous health. I have abundant stenographic notes of Schulte's lectures on the nervous system and feel that they should be published for his reading was wide and his investigations were manifold and thorough.

Schulte had thousands of friends yet one had to know him intimately to be his bosom friend. Being one of these I knew him as he was, a philosopher with a mind that should have recorded its struggles, triumphs and its ingenious welding of human adversities. Traces of sorrow and melancholy could often be discerned in his tête a tête discussions on the philosophy of life for he was an ardent student of Plato and Kant, of Darwin, Huxley and Spencer, of Hamilton and Samuel Butler. Far from being a prey to intellectual grief he enhanced his thoughts and conversations by relating a piquant anecdote, a pleasant remembrance, some witty souvenir of a life which was rich in human experience. Often he would cite a stanza or two of poetry to which I reacted as did Juvenal:

Semper ego auditor tantum, nunquam ne reponam.

Schulte's scientific achievements in anatomical research constitute outstanding contributions in the annals of American Anatomy. His publications comprise such diverse subjects as the anatomy of whales, the lumbar vertebrae of Scutisorex, the venous system of Marsupials, the hydrodynamic factors involved in the organization of the venous return in monotremes, the development of the neuraxis, fusion of cardiac anlage and formation of the cardiac loop, the development of the great veins and the hepatic circulation in the cat and the histogenesis of the salivary glands. All works are admirably written for Schulte had an unusual command of the English language. His wording reached its greatest display in his description of the temporal and squamous bone.

Schulte was the first to give a complete description of the skull of Kogia breviceps, the chief osteological features of this little known whale being the participation of the maxillae in the wall of the cranial cavity, the suppression of both nasals, the complete reduction of the suborbital bar of the malar, and the development of the mid-frontal crest. In two other beautifully illustrated monographs Schulte describes the skeletal muscles of Kogia as compared with conditions in other odontocetes and mystacetes and gives a detailed account of the visceral anatomy of this animal. Schulte's major work on whales is a large monograph on the anatomy of the Sei whale (Balaenoptera borealis) a foetus specimen of which was taken by Roy C. Andrews at Aikawa, Japan, 1910, stored in the American Museum of Natural History and graciously submitted to Schulte for analysis and anatomic description.

In this work on vasculogenesis Schulte found no logical grounds for assigning to endothelium and blood the value of a fourth germ layer, the angioblast of His and Minot. By reconstructions he demonstrated endothelium to be a derivative of mesenchyme from which it throughout ontogeny arises diffusely by a multitude of separate anlages. He supported the adaptive theory of endothelium for in his opinion "endothelium owes its presence to hydrodynamic forces and when these cease to operate, endothelium disappears as endothelium and reverts to mesenchyme or gives rise to products indistinguishable from those of mesenchyme".

By reconstructions Schulte showed that in the development of the heart the median angiocysts (groups of mesenchymal cells) play an important role in the coalescence of the endothelial anlages analogous to that of the middle plate in the fusion of the myoepicardial mantles.

In his work on hepatic circulation Schulte ascertained that there is an independent formation of capillaries in the septum transversum in the sense that a considerable portion of the hepatic vessels are formed before and independent of the resolution of the omphalo-mesenteric and umbilical veins into sinusoids.

The monograph on the development of the neuraxis in the cat by Schulte and Tilney won Schulte a renown as a neurologist. By carefully made reconstructions it was shown that in the cat the ganglionic crest is a derivative of the neural tube, a view which acquires an antecedent probability from the occasional retention of the afferent ganglia cells in the neuraxis of the adult, as the Amphioxus and Teleosts, and in the mesencephalic root of the trigeminus of mammals. Since ganglionic elements are included in the wall of the neural tube at the time of its separation from the ectoderm it was contended that in more cephalic portions of the neural tube where ganglia were not formed, the ganglionic elements must form a permanent constituent of the wall of the brain. In short, the ganglia of cranial nerves were wholly derived from the neuraxis without the participation of the somatic ectoderm. The authors state that "The analysis of the prosencephalon is not to be attempted in terms of the basal and alar plates alone, as has been customary since His, but must include a dorsal and ectal strip equivalent to the ganglionic crest along its convexity, and this must include at least as much of the brain wall as lies ectal to the optic sulcus". Hence the optic vesicle and the ectoptic structures must be considered of ganglionic equivalency. Regarding the composition of the encephalon in terms of basal and alar plates, Schulte and Tilney showed that the sulcus of Monro is not a continuation of the sulcus limitans. The latter ceases to give evidence of its existence immediately in front of the oculomotor nucleus, this being the most cepalic structure which by its derivatives can be assigned to the basal plate.

How the memories of his work on the anatomy of whales lingered with Schulte even as dean became apparent to me one morning when he showed me a telegram from the American Museum of Natural History informing him that a young unknown whale had been taken and that the authorities of the museum wanted him to do the anatomy. "What an opportunity and how I would like to go" said Schulte, but he remained at his post. It is well that he did for the trail hewn out by him in modern medical education will lead the physician to individual and social betterment.

HAD PLENTY OF PAIN

Mandy had been troubled with a toothache for some time before she got up sufficient courage to go to a dentist. The moment he touched the tooth, she screamed.

"What are you making such a noise for?" he demanded. "Don't you know I'm a painless dentist?"

"Well, sah," retorted Mandy, "mebbe you is painless, but Ah isn't."

ABDOMINAL ACTINOMYCOSIS

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Actinomycosis is considered a comparatively rare disease, but it is, nevertheless, a condition with which every physician may at some time or other come in contact. It is considerably more common in males than in females, and usually occurs between the ages of 20 and 40, although a number of cases have been reported in children, the youngest being an infant four weeks old cited by Stokes(1). The disease usually presents a typical history and characteristic, often striking, clinical findings, and although it is extremely serious it is amenable to treatment, in its early stages at least, with fairly satisfactory results.

The causative organism, *actinomyces bovis,* or the ray fungus, is an organism which apparently has little preference as to its habitat in the human body. The most common primary site of the disease is that which is nearest the usual portal of entry, the mouth. Actinomycosis of the head and neck, which corresponds to the "lumpy jaw" of cattle, is the type most frequently seen, and makes up about 55 per cent of the human cases. As to the mode of entry of the organism into the tissues of the faciomaxillary region, it has been generally believed that the fungi are present on straw and grain, and pass through the mucous membranes by way of the minute abrasions produced when such materials are masticated. It must be admitted, however, that for man at least, the evidence for this theory is comparatively meager. The fungi have never been satisfactorily demonstrated on vegetable matter, and Wright(2) and others believe that actinomyces bovis is not a saprophyte but a true parasite and has no habitat outside the animal body. In support of this contention Wright(3), Lord(4). Coller and Adie(5), Turner(6), Wilkinson(7), and others have made smears from the gums, from tonsillar material, and from carious teeth in apparently healthy individuals, and have found organisms having the morphology and staining properties of actinomyces bovis in from 0.08 per cent (Coller and Adie) to 78 per cent of cases (Turner). In many instances the organisms were cultured and inoculated into animals, and lesions were produced which were apparently identical with those of actinomycosis except that they had more of a tendency to remain localized. Several clinical cases have been reported which seem to corroborate these findings, among which may be mentioned particularly those of McWilliams(8) and Cope(9). In both of these cases the patients sustained a laceration of a finger produced by the teeth of another individual, and actinomycosis developed in the wound.

Considerably more uncertainty exists as to the method of infection when the disease appears first in the lungs, as it does in about 15 per cent of cases. It seems possible that in these instances the fungi are inhaled with the secretions of the throat and thus find lodgement in the epithelium of the bronchioles or alveoli. Among other organs which may be involved primarily are the tongue, the skin, the uterus and, strangely enough, the kidney. In many cases, when the disease does not develop in the region of the jaw or neck, the fungi pass on down the gastrointestinal tract and may produce lesions in the esophagus, the liver, the stomach, the duodenum, or more frequently the cecum and appendix. The abdominal type of actinomycosis makes up about 21 per cent of the cases, and of these the primary location of the disease is in the appendix in the vast majority. In a series of 62 cases of abdominal actinomycosis studied by Good(10), 52 originated in the appendix. The frequency with which the cecum and appendix are involved is probably due to the fact that this is a point of stasis for the bowel contents. There are several instances on record in which diverticula of the colon were the site of primary involvement, and in these also stasis must certainly be considered as an important factor in the localization of the disease. After actinomycosis has once developed in the body it begins to spread inexorably, at first by contiguity of tissues, and later by the blood stream until literally any part of the human system may be affected.

Abdominal actinomycosis, like actinomycosis elsewhere in the body, is a chronic disease which is characterized by the development of an extensive indurated area which surrounds single or multiple abscesses, and which has a strong tendency toward sinus formation. The onset of actinomycosis is frequently acute, so that it exactly simulates the ordinary acute appendicitis. Whether the fungi themselves produce the inflammation of the appendix, or whether they are secondary invaders after the inflammation has already occurred, is an academic question which at present cannot be answered. All the usual symptoms of appendicitis are present, and they may even occur in the order which Murphy stressed so strongly, pain, nausea or vomiting, fever and leukocytosis. At operation the appendix may be acutely inflamed, or gangrenous, or an abscess may be found, and no question may arise as to the accuracy of the diagnosis until either the wound refuses to heal completely, or sinuses form and continue to drain intermittently for long periods of time. In some cases, on the other hand, the onset of the disease may be more insidious, and the first symptom noticed by the patient may be swelling in the right lower quadrant. The mass may later become tender, and may break down with the formation of sinuses. The mass is usually very hard, and the skin over it frequently assumes a purplish color. Drainage of the abscess to the outside causes a temporary relief of symptoms, but the extension of the disease continues, other abscesses form, and toxic symptoms, fever, pain and general malaise, recur. During the course of the disease abscesses may develop in various situations: under the diaphragm, in the liver, in or around the kidney, in the groin, in the abdominal wall, in the hip joint. The lung is involved by direct extension through the diaphragm, or in later stages through the blood stream, in about 20 per cent of the cases of appendiceal origin, according to Good. If the primary focus is in the upper abdomen, the lungs and pleura are even more frequently affected.

In making a diagnosis of actinomycosis, the clinical history and the physical findings are extremely important. If a discharging sinus is present, however, any uncertainty which exists can be relieved by demonstrating the causative organism in the pus. Repeated examinations may be necessary but a continued search is usually successful. If the pus is very thick it is sometimes helpful to dilute it with an equal amount of water in a test tube, shake the tube thoroughly and then allow it to stand overnight, when the sulphur granules will have settled out and are more easily seen. If the discharge is scanty the sinuses should be curetted and the material obtained subjected to careful study under the microscope in order to detect any of the branching filaments which may have grown along the walls of the tracts. The so-called "sulphur granules" are asteroid clusters of the fungi which most commonly develop in the free pus of abscess cavities but may also be found in the granulation tissue. These granules are yellowish or yellowish-green in color, are about the size of the head of an ordinary pin (1 to 2 mm.), and are not easily crushed. When stained and pressed out under a cover glass there is a radial arrangement of the filaments which is easily recognizable. In some cases, more commonly in the bovine type, the peripheral ends of the faliments are enlarged and clubbed, probably a reaction of the fungus to a different kind of tissue.

The prognosis of the abdominal type of the disease is far less favorable than in the skin or jaw types. Of the 62 cases of abdominal actinomycosis studied by Good, 29 had died, 6 had improved, and the disease had apparently been arrested in 8. The average duration of symptoms from onset to death in the 29 cases was about 2 years, although one patient had apparently had the disease for 17 years before finally succumbing to it. Many different methods of treatment have been used, including vaccine, arsphenamine, and locally injected copper sulphate solution. The most generally accepted medication, however, is potassium iodide, given in massive doses. The iodide is preferably given in milk or cream, and is pushed to the limit of tolerance. This drug, by its alterative action, breaks down the indurated tissues, and apparently enables the body to destroy more easily the invading organisms. Combined with, or following a course of this treatment, deep x-ray therapy should be used, as it has a definitely beneficial, and in some cases curative, effect. From a surgical standpoint, the treatment of actinomycosis must be confirmed mainly to the opening and draining of abscesses, and the curettage of sinuses, although in rare instances more radical measures may be indicated.

CASE REPORT

Mrs. R. W., a 23 year old housewife, first consulted one of us on January 17, 1932, with the complaint of severe pain in the lower right abdomen. She had been married 6 years, and had one child 5 years of age. Her childhood up to the age of 8 years had been spent on a farm, and she continued to live on the farm during her summer vacations until the time of her marriage. In the course of one of these vacations when she was 13 years old, she suddenly developed pain in the right lower quadrant, fever and vomiting. Five days later she was operated on, and a ruptured appendix was found. Drains were inserted, and discharge of pus from the wound continued for 6 months. 8 months after the operation she was able to return to school, but regained her strength only very slowly The lower right side of her abdomen remained tender, and she had occasional pain in that location. After the birth of her child in 1927 the pain became more severe and came on more frequently. 3 years ago, shortly after a fall, a mass began to form in the right lower quadrant. This soon became exquisitely tender, and had the appearance of an abscess about to rupture, the skin in that region becoming very tense and taking on a purplish color. In a few days the abscess opened spontaneously, and discharged a thick, grayish-yellow pus. A physician was called and treated the abscess by expressing the pus, and swabbing the sinus with mercurochrome. The drainage continued, and after two weeks another physician was called and treated it in a similar manner. The drainage was so profuse that it would saturate a cotton dressing and run down the patient's leg. During this time, the patient on several occasions noticed small greenish-yellow granules in the discharging pus. She showed them to her mother but did not mention them to her physician. The abscess drained intermittently for about 3 months, until March, 1929, but from that time on it remained closed. She continued to have more or less pain and tenderness in the lower abdomen until, 3 days before we saw her, she had an unusually severe attack. The pain at that time was made worse by movement of the right thigh so that in walking she kept her right leg stiff, and was able to get around only with difficulty.

The physical examination was negative except for a mass about 4 inches in diameter in the right lower quadrant. This mass was so hard that it felt almost like a sarcoma, except that at one point near the center there seemed to be some fluctuation. The skin was normal in color and texture over the mass and was not adherent to the underlying tissues. A blood count showed 70% hemoglobin, 4,300,000 erythrocytes and 11,000 leukocytes, with 74% polymorphonuclears, 24% lymphocytes and 2% transitionals. The examination of the urine was negative, and x-rays of the chest and pelvic bones were negative.

At the operation, which was performed on January 21, 1932, an incision was made over the mass, and the abdomen was entered with considerable difficulty. The intestines were densely matted together and to the parietal peritoneum, but by blunt dissection an abscess cavity was visualized in the ileocecal region, and about 2 ounces of greenish-yellow pus was evacuated. In this pus was seen a large number (approximately 25) sulphur granules which were typical in appearance both grossly and microscopically. Two Penrose cigarette drains were inserted, and the wound was closed in the usual manner. The patient's convalescence was uneventful, drainage soon became small in amount and the drains were removed on the tenth day. On the fourth postoperative day she was given 20 minims of a saturated solution of potassium iodide three times a day, and this was increased 10 minims per day until she was taking 240 minims daily. At this point the patient began to show signs of iodism, manifested by coryza, and she was given a three day rest period after which the treatment was started again. X-ray therapy was given in five doses over the lower abdomen. The wound healed about three weeks after the operation and since then the patient has felt perfectly well.

COMMENT

One of the most interesting aspects of this case is the long duration of the disease. There can be little doubt that actinomycosis was the cause of, or started at the time of, her original trouble 9 years ago, since following the drainage of her appendiceal abscess at that time discharge from the wound persisted for 6 months. That history alone should be sufficient to set her case aside as no ordinary appendicitis. Drainage from a ruptured appendix ordinarily ceases and the wound closes in from 3 to 4 weeks. The fact that this one drained for 6 months should lead one to seek an explanation in one of four conditions: 1. Fecal fistula. This complication should be fairly obvious, and in any case the ordinary fecal fistula would usually have closed long before the expiration of 6 months. 2. Foreign body. 3. Tuberculosis. 4. Actinomycosis. The subsequent history, the intermittant drainage from sinuses, the pain, and later, the mass were typical of actinomycosis.

At the operation, the most striking thing, aside from the sulphur granules, was the most extensive area of induration with its leathery hardness. One's first thought was one of wonder that the patient had not developed intestinal obstruction long before from the adhesions of the bowel, but that is one peculiar thing about actinomycosis: in spite of the adhesions and the induration one practically never hears of obstruction occurring. The fungi themselves are not often found in the indurated area, and what there is about the organism that produces this extensive tissue reaction is unknown.

Up to the present time, 4 months after the operation, the patient had been feeling better than she has for many years. She has reacted very favorably to the x-ray and iodides, has gained weight, and the abdominal mass has entirely disappeared.

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The absent-minded professor called his biology class to order shortly after the lunch hour.

"Our special work this afternoon," he said, "will be cutting up and inspecting the inward workings of a frog. I have a frog here in my pocket to be used as a specimen."

He reached into his pocket and pulled out a paper sack, shook its contents on the table, and out rolled a nice looking ham sandwich. The professor looked at it, perplexed, scratched his head and muttered:

"That's funny: I distinctly remember eating my lunch."

ALARMING SYMPTOMS FOLLOWING MAXILLARY SINUS MEDICATION: CASE REPORT

D. D. SANDERSON, M. D.,
Lincoln, Nebraska.

At the Triological Society meeting in 1922, Dr. Hanau W. Loeb reported a fatal case five days following submucous resection. This caused him to investigate as thoroughly as possible the fatalities resulting from nose and throat surgery. He was able to obtain fairly definite histories in 332 cases of death from various causes; of these five were attributed directly to heart complications listed as, angina pectoris after tonsilectomy; dilatation of the heart after removal of nasal polyps; cardiac asthma after tonsilectomy; cardiac infarct after lancing peritonsilar abscess and rupture of heart after submucous resection. Included in his 30 cases of undetermined causes were 5 cases from puncture of naso-maxillary wall and irrigation of the maxillary sinuses. He says, "The interesting cases in this group are those in which there was puncture of the naso-maxillary wall and irrigation of the sinus. They may well be compared to 16 cases already reported and discussed at great length by Gording and Grove." Dr. W. E. Grove's most interesting article on mishaps in the puncture and irrigation of the maxillary sinus, read before the Triological Society in 1922, gives a very thorough review of a paper read before the same society in 1920 by Dr. Reidar Gording. Also Dr. Groves gave a most interesting report of 79 cases with 15 deaths immediately traceable to the operation and one being questionable. The remaining 63 cases all had varying unfortunate results all traceable to the treatment of the maxillary sinus. The article by Dr. Reidar Gording of Norway is a very exhaustive article giving the results of laboratory and operative observations with the report of 4 cases.

Dr. Loeb continued his study for one year but was unable to add anything materially to his previous report. However, this did materially encourage Dr. R. H. Skillern in 1925 to make his analysis of the probable causes before the American Academy of Ophthalmology and Otolaryngology. At this time Dr. Skillern presented a paper theorizing the cause of collapse of patients after simple maxillary sinus puncture and irrigation. His paper brought out a discussion that with the report of cases was most interesting. Because of the infrequent occurrence and because of the seriousness of the condition various theories have been offered. The principal one being that of an air embolus. However, post mortem findings do not appear to substantiate it; neither does it appear that any other form of embolus can be positively proven. The following case is reported because it appears to present a different condition from most of those reported but not unlike some of them.

Miss A, age 30, had generally good health, past history negative except tonsils removed 4 years ago, local anaesthesia; appendix removed 3 years ago under gas anaesthetic; about 2 years ago complained of left side trifacial neuralgia pointing at left upper second molar. This was removed under gas. The tooth was vital and appeared macroscopically to be normal. The neuralgia was at once completely relieved. For 5 days the entire side of the head and face including the eye ball and fundus was markedly swollen and a deep blue color. This gradually receded. (In examining the tooth with a sterile probe an assistant stuck the end of one finger sufficiently to make it bleed slightly. Iodine application was made to the area at once. For 3 days the finger was red, swollen and tender with pains reaching to the shoulders but gradually returned to normal.) During the following winter at various times the left side of the nose would show some acute infection after being in the presence of a certain person who was considered a carrier. These attacks were of short duration. Cultures and smears showed staphylococci. About the first of April a positive left side ethmoiditis developed which responded to alkaline irrigations and 5% neosilvol packs. July 22 an acute left ethmoiditis with much purulent discharge necessitated an exenteration. This attack was so active that the maxillary sinus showed some evidence of infection. Both sinuses gradually improved. The maxillary sinus cleared as the ethmoid infection improved. August 8 she developed an acute reinfection of the left nasal mucous membrance and some pain over the left maxillary. The acute infection rapidly subsided. An infected area appeared to persist near the maxillary ostium. X-ray and illumination did not show any increased density as compared with the right side. There was no time except at the time of the ethmoid infection when the exenteration was performed that the temperature had varied perceptably from normal. The blood count and urinalysis remained normal. During the entire time she would have attacks of neuritis of varying severity. Sometimes trifacial and sometimes exhibiting a principal point of tenderness at the fourth costo-sternal area. After the ethmoid exenteration the costo-sternal area was so sensitive that it necessitated rest in bed for approximately four weeks before being completely relieved. A very slight pleural friction could be detected but no cardiac abnormality. The pulse rate remained at all times between 68 and 72, temperature normal. September 18, because of the septic appearance of the mucous membrane about the maxillary ostium, after passing a flexible probe through the ostium without noticeable difficulty, 2 cc. of a 5% solution of neosilvol was injected into the sinus. The patient stated that something seemed to give way as the solution was injected. The patient at once began to complain of feeling weak and smothering. About twenty minutes after the injection the pulse became so slow and weak it was unable to be counted. This was accompanied with extreme cyanosis, violent cardiac pain, repeated projectile vomiting, and a violent chill. Hypodermic of 5 m of adrenalin followed by 1/30 gr. of strychnine and 1/8 gr. of morphine gave no relief. Light inhalation of ether to control the pain and chill were administered for about one hour. At this time the temperature and pulse rate started to rise. The temperature rose in one hour to 105.2, the pulse above 150, both retaining this rate for four hours then began to gradually recede, the temperature reaching normal in 48 hours and remained comparatively normal, varying from approximately ½ degree subnormal to normal for about one week. The pulse rate became her normal, 70, the third day. No abnormality of the heart sounds except the slight arythmia could be detected. No electro-cardiogram was made. So long as she remained lying quietly with no exertion she suffered no distress except extreme sensations of weakness.

On October 2 and October 10, after being placed in an erect position, she had attacks similar to the one on September 18, but not nearly so severe. These did not necessitate medication to control. The following two weeks she gradually improved, walked comfortably about the house when, suddenly, after over-exerting, principally as a result of anxiety, her pulse rose to 84, temperature down to 98. She at once complained of the same distress as before but not so severe. Pulse and temperature gradually returned to normal during the next four days. The patient complained of heavy distressing pain in the cardiac region and including the left chest and arm. Both the left chest and arm had a sensation of being swollen but to appearances was not. However, it was somewhat inhibited in its movements. The patient gradually improved taking about six months to regain her normal activity. Frequent cardiac examinations have given no clinical evidence of obstruction. The sinus infection rapidly became normal after the injection.

CONCLUSIONS

Following the conclusions of various writers of general medicine we must believe the first attack if given a direct name must be called angina pectoris. But if this is true we must then conclude that angina pectoris is a symptom and not a true disease. It appears as if we must conclude it to be a nerve reflex either through the sympathetic system and the vagus or as has been suggested by Dr. B. N. Culver through the fifth nerve and the vagus.

RUPTURE OF THE UTERUS IN THE SEVENTH MONTH OF PREGNANCY THROUGH THE SCAR OF CURET PERFORATION

C. H. WATERS, B. S., M. D., F. A. C. S.,*
Omaha, Nebraska.

Mrs. C. T., age 26, para 2:

On January 2, 1929, in getting out of bed she had a sudden sharp pain in the abdomen accompanied with syncope. The condition was regarded by her physician as the beginning of a miscarriage in her seventh month of pregnancy. She was kept in bed and given morphine. Her pulse and temperature at that time were normal. During the balance of the day there was no evident uterine contractions nor pains and she rested quite comfortably. The afternoon of the next day her temperature was 99, pulse 100, and still no evident uterine contraction, fetal heart sounds or fetal movements.

She was admitted to the Immanuel hospital that evening, January 3, 1929, with a leukocyte count of 18,000, temperature 99.2 and pulse 110. Examination of the abdomen showed the fetus in the left flank, but there were no heart sounds to be heard or fetal movements demonstrable. A vaginal examination showed the cervix to be dilated about an inch and the uterus contracted down around the fetal head. The remainder of the body of the fetus was, presumably intact within the sac and placenta, lying in the peritoneal cavity well over to the left side.

Arriving at the diagnosis of a ruptured uterus with extrusion of the fetus, we sought for a probable explanation and we ascertained the following rather significant point in her history. About six months previous to the onset of the present pregnancy she had a curettage in another city, and judging from the procedure and anxiety of her attending surgeons immediately following this curettage, it would appear that a perforation of the uterus occurred at that time. She stated that rubber tube drains were inserted into the uterus and that she had been ill with abdominal pain and was in the hospital under rather close observation for two weeks.

At operation shortly after admission to the hospital on this occasion, the fetus, with intact membranes and the entire placenta, was found in the left gutter. The uterus had contracted down around the fetal neck, the head remaining in the uterine cavity. Strangely there was very little blood in the pelvis, as the prompt contraction about the neck and head served effectively as a tampon. The head was extracted from the uterus, the tear being in the left cornual region.

Because of the number of previous vaginal examinations and the possibilities of subsequent infection of the uterus and, insofar as her condition was quite satisfactory, it was deemed advisable to remove the uterus. Convalescence was uneventful.

COMMENT

It is a reasonable inference that a curet perforation left a scarred and weakened area in the fundus of the uterus which gave way abruptly during the early part of the seventh month of pregnancy. Perforation of the uterus with a curet is not an uncommon accident, and emphasizes the necessity for caution in this seemingly trivial operative procedure. When it is realized that a perforation has been caused, the abdomen should be opened immediately to investigate and repair damage that may have been done.

TIRED OF DRY PERIOD

Patient—Doc, you remember two years ago you advised me to be careful and not to get wet.

Doctor—That's right. How do you feel now?

Patient—Pretty uncomfortable—and I want to know if I can take a bath.

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THE DEBT OF EX-PRESIDENTS TO ORGANIZED MEDICINE

Under the By-Laws of the Nebraska State Medical Association a past president becomes a member of the house of delegates for life on the theory that the special knowledge gained while president should make the individual a valuable member of the councils of the house of delegates and also by a later enactment the recent past president is a member of the Council for one year immediately succeeding his term as president.

At this time there are living twenty-four former presidents of the Nebraska State Medical Association. twenty-one of whom live within this state. The roll call of the house of delegates reveals a lamentable lack of apparent interest of most past presidents in medical organization. At the annual session of the past five years but three past presidents consistently attended all the meetings of the house of delegates, took an interest in all the proceedings and participated in the discussions. In 1928, six attended one or two meetings; in 1929. seven; in 1930, eight; in 1931, seven; in 1932, nine. In most instances, of those who attended but one or two roll calls, the interest may be said to have been perfunctory.

On a previous occasion we stated that no physicion is so proud of position in life and of his attainments as to despise the honor of the presidency of the State Medical Association. The honor of the presidency can come to but a few men. A man is picked for the presidency, because he is an outstanding man in scientific attainments, or because his activities in medical organization have seemed to fit him for the place.

These men owe something to the organization that has so signally honored them. Can it be that all they care for is the honor and after that has been bestowed they are content to rest on their laurels and let the organization drift whither it may?

Certain it is that a lamentable lack of interest is evidenced by many former presidents in a work that should call forth their best efforts during their active years.

HEALTH EDUCATION ACTIVITIES ONE REASON FOR STATE FAIR

Those members of the Nebraska State Medical Association who have so willingly and so often given of their time to help with the Health Education Program at the State Fair, must have read with satisfaction a certain news item on the front page of one of our daily papers recently. In this news item, Scretary Jackson, of the State Fair Board, welcomes an investigation of the State Fair proceedings by the legislative and executive branches of our government.

The point of particular interest in the news item, to our doctors, is found in Mr. Jackson's defense of the Fair Board's program. Here he uses the Nebraska State Medical Association's Health Education Activities in the Women's Building, as one of his leading points in defense:

Secretary Jackson says: "What the Fair Board desires is an investigation from persons outside of the Fair management. We ask a committee to investigate all features of the State Fair which are educational in their scope. The committee should be taken to the Women's Building, where last year we gave physical examinations to more than six hundred people—two hundred babies, two hundred young people and mothers. and two hundred older people. We want, etc . ."

When you consider that the Fair Board uses this activity as a defense for its existence; and when you consider that this activity is but a few years old, then I am sure you will be pleased to have given your time and services for this activity. This voluntary statement given out under investigation circumstances, should serve as a healthy stimulus for the Nebraska State Medical Association Committee on Public Activities.

ELECTROSURGERY

Electrosurgery has now progressed to such a place in therapeutics that every surgeon should inform himself of its potentialities, and be so equipped as to give his patients the benefits of its value.

Howard Kelly has termed Electrosurgery "The New Surgery", which in reality it is. No one who has not in a practical way familiarized himself with its advantages in certain types of external and visceral surgery, particularly in the removal of malignant growths, is in a position to know or comprehend the advantages and possibilities, not only in lessening the immediate dangers of operative interference, but also particularly in lessening the probabilities of recurrences.

The field of application of the high frequency current is rapidly spreading until its employment in place of the scalpel, indeed its possibilities of usefulness, where the knife was contra-indicated, is forcing attention in such a way that physicians and surgeons will be impelled to relieve their skepticism by the realization of a fact accomplished.

The brain, the oral cavity, the thyroid, the breast, the viscera, gynecology, and surgery of the bladder, its new growths, the prostate, are examples. Soon, it promises even the operation of prostatectomy with its few dangers, but operative and postoperative morbidity and possible complications, will be replaced by a simple transurethral electrosurgical destruction of the obstructing portion of the growth with practically no danger; a few days postoperative morbidity, a minor operative procedure is properly prepared patients. Many more will go to the surgeon earlier when these facts are known—they are practically facts today. Like truths in a lesser degree apply to the treatment of gynecological and several rectal afflictions, and to all malignancies.

Any one who has kept informed by attendance at Medical meetings and through the medical press, and has endeavored to use the appliances which have been put forward by the electrosurgical supply houses, to date, must realize the progress made in the improvement of the commonly called surgical diathermy machines. They can now be had that will do satisfactory work of all kinds, viz., dividing tissues under water as in the bladder. I have found several machines too light to do satisfactory heavy work, as the radical removal of a breast together with heavy pectoral muscles.

No surgeon can pretend to do the best for his clientele who does not inform himself and be familiar with the progress that is being made in "The New Surgery". There have only been two books published in this country on Electrosurgery: the first by Wyeth, and just off the press, another by Howard Kelly—a surely enlightening volume, which every doctor should own. It will tell him what may seriously be considered as the best advice to offer or practice when surgery, particularly that of new growths is under consideration.

I have found that the galvano cautery, the Percy cautery, and the soldering iron, many times have their advantages over the electrosurgical needle. Judgment, which means experience and an indefinite *something* to qualify it, is the best arbitrator of practice—it must be initiated and kept active by knowledge of what others have done and are doing.

—John E. Summers, Omaha.

CONCERNING SPINAL ANESTHESIA

The hysteria not infrequently shown in the American civic body often reflects itself in professional attitudes toward scientific matters.

The sane progress of medicine must recognize the trend toward diagnostic and therapeutic measures which have considerable popular appeal although only moderate scientific merit. Valid opinions are based only on carefully observed phenomena with a thorough appreciation of the fundamental principles underlying them. These essentials are not sufficiently stressed in much of the literature now appearing on spinal anesthesia. As a firm believer in the value of this procedure and as one who has used it more than a thousand times in general surgical practice, it is desired to emphasize what are considered essential points if spinal anesthesia is to be employed with minimum risk.

1. It is not a type of anesthesia to be reserved for "poor risk" cases.

2. The greatest danger apparently arises from a sudden and profound fall in blood pressure.

3. In every case this fall cannot be prevented by ephedrin, adrenalin, change in position, or other methods at the surgeon's command.

4. It is especially difficult to prevent development of acute hypotension in arteriosclerotic individuals and equally difficult to restore blood pressure once it is lost.

5. There is an inherent, though not necessarily

immediate danger in high spinal anesthesia in sclerotic hypertensive cases.

6. Permanent harmful effect may result from a five minute period of acute anemia of the brain in arteriosclerotic individuals even though the pressure be later restored and maintained.

7. Excessively fat patients with high diaphragm and low vital capacity are not the best subjects for spinal anesthesia. They breathe poorly if their intercostal muscles are paralyzed with high anesthesia. If they are put in the Trendelenburg position, the weight of their abdominal content seriously interferes with the action of the diaphragm.

8. Patients with hypotension due to blood loss or shock may be safely operated upon if transfused with blood or infused with normal salt solution and glucose, with or without adrenaline before or immediately after the anesthesia is induced.

9. Carbon dioxide given during operation stimulates respiration and raises blood pressure, and should be immediately available.

10. Only adrenalin, given intravenously, can have any effect in restoring a collapsed circulation. In less severe cases ephedrine given subcutaneously is sometimes helpful but should not be relied upon. Other drugs act too slowly or are rendered largely worthless by the nerve block that has been induced.

11. With good anesthesia technique, preoperative medication is not a major factor in seriously lowered blood pressure during spinal anesthesia. It is true that the barbiturates in large doses induce hypotension. If they are given in sedative doses only, they have no disturbing effect.

12. Postoperative pulmonary complications cannot be eliminated or even lessened with spinal block. In my series of cases both with and without carbon dioxide during and after operation, the incidence of pulmonary complications did not fall below that with local, ether, or gas anesthesia.

A careful surgeon will not operate upon all his cases under spinal anesthesia. No more would he use local or gas oxygen or ether anesthesia in every instance. To the extent that he employs spinal anesthesia he will loathe to use any other, for it opens to sight and touch, especially in the abdomen, areas that are otherwise with difficulty accessible. The marvelous muscular relaxation obtained with spinal anesthesia is not, however, an indication for its use. It is a criterion of its desirability rather than of its availability.

Our experience in the St. Joseph's and Douglas County hospitals in Omaha, convinces us that spinal block in experienced hands is unquestionably the most desirable anesthesia in the great majority of cases from the standpoint of the patient, surgeon, and the nursing personnel. The convalescence of the surgicalized patient is incomparably smoother than with other forms of anesthesia. It has, however, certain inherent dangers which can be minimized by proper selection of cases and, possibly, by further refinement of technique in administration.

Only the volatile anesthetic agents are easily controllable. Of these, ether has much the widest margin of safety. In our opinion it continues to be the most generally available and the safest anesthetic in general surgical practice.

—J. W. Duncan, Omaha.

POST-GRADUATE EXTENSION COURSES

General John J. Pershing has just said, in connection with his discussion of the depression and its cures, that no better use can possibly be made of a man's time during a lull than to further perfect his ability. The previous application of this very rule helps many a general to hold his sector when the hour of stress comes. He states that the officer who lapses into semi-lethargy, with hours of bridge playing, during a lull, is not the offcer who climbs the ladder of promotion.

J. Lyman Wilbur, less than a year ago stressed this same point, when he urged the use of idle hours in depression times for study and perfection of the doctor's ability. Industrial leaders have urged the application of this same rule, and in some such centers schools for the perfection of needed abilities have been provided.

In this connection, it is interesting to note what some of our neighboring states are doing in regard to post-graduate educational work for practitioners. Previous mention in earlier journals of this year has referred to the work in Kansas and Oklahoma. The following program is going on at this time in southwest Wisconsin, in Obstetrics and Gynecology:

The class topics follow in the order of their presentation:

1. The Pelvis, Pelvimetry, and the Contracted Pelvis.
2. Ante Partum and Post Partum Hemorrhage: Causes, Diagnosis, and Treatment.
3. Obstetrical Analgesia and Anesthesia.
4. Forceps; Indications, Contraindications, Methods.
5. Management of Breech Presentations and Version.

6. Caesarean Section: Uses, Indications, and Abuses.
7. Management of Normal Pregnancy.
8. Complications of Pregnancy Including Abortion and Premature Labor.
9. Management of Normal Labor.
10. Management of Normal Puerperium.
11. The Toxemias of Pregnancy.
12. Puerperal Infections.

The classes will consist of informal lectures and demonstrations, in some of which lantern slides and motion pictures will be used. There will be opportunity in each class period for informal discussion of questions concerning obstetrical problems and related topics.

In Drs. Schwarz and Plass the Society has obtained two of the outstanding teachers of the subject; their extension experience has comprised years of teaching at similar centers in many states.

These classes are held one day a week for twelve weeks. They are conducted by Drs. Otto H. Schwarz. who is a Yale University man with an M. D. degree from Washington, where he is now professor of Obstetrics and Gynecology; also by Dr. Everett D. Plass, a Colgate and a Hopkins graduate, and now professor of Obstetrics and Gynecology at the University of Iowa. It seems possible, therefore, to get excellent talent; and it seems practical and economically possible to arrange these classes.

When a doctor is working eighteen to twenty hours a day, he is fit neither physically nor mentally for student work. We believe Pershing is right, and we congratulate our neighbors on their ability to apply his advice.

—J. S. Welch, Lincoln.

RABIES

Owing to the impulse or tendency to kill a dog or other animal that has bitten or threatened to bite a person, a serious handicap arises in determining whether rabies is a factor in the animal's action. Particularly is this true during hot weather, as an animal is more likely to be irritable or cross (*not rabid*) due to the heat. *Heat does not cause rabies.*

Contrary to popular belief, rabies has no relation to "dog days", nor is the disease more prevalent during the summer months. A broad survey some years ago revealed the winter and spring months to be the period of highest incidence. No tabulated data show an increase during the hotter months.

"Hydrophobia" meaning "fear of water" is a misnomer, as rabid animals do not fear water. This term was applied as a result of the dog's actions while attempting to drink after paralysis of the throat had developed.

Rabies is a disease caused by a virus that involves the nerve structures of the infected body. While the disease is most common in dogs, any warm blooded animal, including man, may be infected. The transmission of the virus is usually by means of a bite.

Toward directing attention to effective procedure, we submit the subject matter of an instruction bulletin issued by this office:

"Do not kill the dog that has bitten someone. Such dog, also dogs showing symptoms suspicious of rabies, although not known to have bitten anyone, should be captured and confined for observation. The confinement should be amply secure. for a dog in the frenzy of furious rabies requires a much stronger collar and chain or enclosure than a non-rabid dog. As it is possible for rabies to have progressed far enough for the dog to be capable of transmitting the disease before it has reached a stage where it can be confirmed by laboratory examination, the dog should be confined for a period of fourteen days to exclude rabies; subject to periodic observation for symptoms.

"The diagnosis of rabies may be difficult and may require the judgment of an experienced veterinarian. The symptoms suspicious of rabies are:

1. Weakness or paralysis of lower jaw, sometimes called "jaw-drop", often causing the owner to believe the dog has a bone in its throat.
2. Weakness or paralysis of the legs.
3. Sudden change in disposition.
4. Unusual nervousness or irritability.
5. Tendency to snap or bite without provocation.
6. Change in voice.
7. Tendency to leave home.
8. Refusal to eat or difficulty in swallowing.

"If the dog shows no symptoms of rabies two weeks after biting, it has not transmitted the disease and Pasteur treatment of bitten individuals is unnecessary. If the dog under observation shows definite symptoms diagnostic of rabies, Pasteur treatment should be given persons bitten by this dog. The dog may then be killed as described in the following paragraph.

"Laboratory examination: If the dog under observation shows unmistakable symptoms of rabies the dog should be killed, taking care not to injure the head. The head should be severed from the body, packed in a water-tight receptacle, this surrounded by cracked ice in a second container so that none of the water from the melting ice comes in contact with the dog's head, and forwarded to the laboratory by prepaid express for confirmation of the diagnosis. Full information should be furnished the laboratory by telegram, telephone, or letter. In case adequate observation of the suspected animal has not been made, the only safe procedure is the administration of antirabic treatment to bitten individuals whatever the laboratory report, there being no cure once the disease has developed.

"Except bites upon head, arms, or upper portion of the body, the detention period affords sufficient time for institution of antirabic treatment of a person bitten by a rabid animal. Antirabic treatment of humans can be administered by a qualified physician in any locality without serious inconvenience to the patient, as physicians can readily secure the necessary medication from any standard supply house."

—P. H. Bartholomew, Director of Public Health.

INACTIVE DUTY TRAINING AT MAYO CLINIC

The medico-military course of inactive duty training for Medical Department Reserve officers, which has been held at the Mayo Clinic during the past three years, will again be held this year from October 16 to 29, both dates inclusive. This inactive duty training will follow the plan so well worked out under the auspices of Colonel George A. Skinner and the military features will be under his personal supervision.

This medico-military course is based on the sound principle that when the Reserve officer gives up two weeks of his time for inactive duty training at his own expense he should derive some benefit therefrom which will definitely help him in his profession. This method of training takes cognizance in a high degree of this principle in that the student officer gets two weeks of excellent clinical post-graduate work without fee and without any greater loss of time from his practice than normally is incurred for post-graduate work, along professional lines. At the same time he gets a definite amount of medico-military training, the benefits of which he retains.

In furtherance of this concept, the Mayo Clinic has freely placed all of its clinical material, laboratory, museum, library, and so forth at the disposal of the Medical Department Reserve officers taking this inactive duty training. The faculty and staff of the Mayo Clinic have volunteered to give their services free in the interests of national defense.

This short course is equally applicable to general practitioners and specialists. The morning hours are devoted to purely professional subjects selected by the student officers. The afternoon hours pertain solely to medico-military subjects and the evening hours are covered in a lyceum course of general interest.

Application for this course of inactive duty training should be made either to the Director of the Mayo Foundation, Rochester, Minnesota, or to the Corps Area Surgeon, Seventh Corps Area, Omaha, Nebraska. Applications should state the character of the work the candidate desires to follow in the morning hours. All student officers are expected to attend and to participate in the afternoon and evening sessions. Each applicant should fully understand that the invitation to accept this course of study without charge is extended by the Mayo Clinic; that the project is without expense to the government; and that two hundred hours' credit will be given to those who take and complete the course.

SOCIAL INSURANCE UNDERMINES NATIONAL CHARACTER (Continued)

Someone has said, "Happy is the nation that has no history". Whoever said this probably had in mind the old type school history text books which contained little besides records of military campaigns, revolutions and international wars. Viewed from that standpoint the epigram was unquestionably true. Today a more suitable epigram would be—Happy is the nation that has no need for charitable organizations or devices. The ideal society would be one in which every individual can and does secure a decent living for himself and those dependent upon him by the "sweat of his brow", or by mental exertion, or, what would be better still, by the application of both brain and brawn.

There is no fundamental difference between outright charity and social insurance; both undermine character; both have a tendency to pauperize the citizen, for both rob the individual of his self-reliance and his enthusiasm and his urge for industry; they both penalize the honest, frugal and industrious and favor the lazy shifters and immoral because they inevitably favor the unfair and inequable distribution of the results of labor; both encourage malingering and favor neuroses; both often give something for nothing or much for little, which is the basis of parasitism, and both delay the ultimate goal when every man shall reap the fruits of his labors.

The man who once accepts charity, particularly if it is not a case of dire necessity, is not quite so fine a man as he was before. He has lost something that nothing can replace. War, pestilence, or general disaster may reduce anyone of us to want and penury and then there is no disgrace in accepting aid from our fellowmen; but under ordinary circumstances no able bodied individual with fair intelligence and health has any moral right to that which he has not honestly earned.

The proponents of Compulsory Health Insurance will undoubtedly say that it was with the view of saving men and women from the stigma of being paupers and the evil effects of pauperism that this and other phases of social insurance were brought forward. Exactly, but what has actually happened they did not foresee. As is so generally the consequence when a law is enacted on an emotional basis instead of on sound reasoning and adequate experience, an element was introduced even worse than pauperism; besides, pauperism was not relieved nor even mitigated.

There are two distinct types of paupers. The mentally and morally subnormal who are not in any way injured by the stigma of pauperism and who still remain paupers because no Compulsory Health Insurance law so far devised includes or can include them. They are the "unemployables" whom industry cannot use. The second class are old people who in their youth have been lazy or extravagant, or who have lost their savings through poor investments. Those who have been lazy and extravagant are simply reaping their just reward and have no one to blame but themselves and it is morally wrong for the government to tax the thrifty and industrious for their support except in almshouses. The way to deal with the problem of the investment sharks is to teach the pupils in our high schools something about investment and to hang the gold brick and non-secure security salesmen, or if this is too drastic devise some other way of putting them out of business.

Compulsory Health Insurance has simply added parasitism to pauperism. The effect upon the insured and upon the public in general is almost as bad as it is on the medical profession. It encourages malingering and deception; it puts a premium on sloth and shiftlessness and a penalty on industry and integrity and thrift; it robs industry of its just reward; and it encourages parasitism.

One of the first effects observed after its introduction in Germany was the changed attitude of a large group of the insured. Before the law went into effect, patients came to their physicians for the relief of real ailments; after it went into effect an ever-increasing number came with imaginary and simulated ailments for the purpose of getting the sick benefit stipend or free hospital care. The latter was particularly the case in the fall of the year when many came complaining of things that were difficult to diagnose and hence difficult to exclude such as spinal concussion, neuritis, and vague abdominal pains. As time has passed this abuse has gradually grown to appalling proportions as the following statistics indicate. Dr. Potts of Oak Park, cites the following:

In a check-up in Braunschweig, two thousand eight (2,008) people on the sick list were asked to report for a check-up examination. This induced eight hundred sixteen (816) to report for work at once, two hundred eighty-nine (289) were found fit for work and only nine hundred three (903) or less than forty-five (45) percent of those receiving sick money were actually sick. The proponents of Compulsory Health Insurance will undoubtedly say—this is an individual instance. But not so. This abuse is so almost universal that it is seriously affecting the general honesty of the rank and file of the citizens of those countries where it has been in operation the longest. Social insurance is one of the major factors which has brought Germany to the very verge of economic ruin, and worse than even that —it is undermining the fundamental honesty and moral integrity of the German citizen.

—Edward H. Ochsner, Chicago.

A GENERAL PRACTITIONER'S RESPONSE TO THE CHALLENGE OF OBSTETRICS

"A real obstetrician is one who has had a thorough training in general medicine and who is familiar with pelvic and abdominal surgery. He must have in abundance the attributes of a gentleman. He should be conservative, that is, one who knows how and when to be radical. He should see in obstetrics the most marvelous of all the dramas of life, a drama written by the Creator himself in the role of mother nature, and acted by motherhood in its most divine mood. The physician is the director and brings with him the knowledge and the wisdom and the skill that he has acquired from his preceptor, his experiences and from the expression of the ages that have gone before. He should bring safety tempered by no compromise, firmness tempered with kindliness; and a heart, a hand, and a mind coordinated with the spirit of the drama that moves on before him. And a greater calling than this has no man. Now most of what I have told you will be forgotten and so I should like to recapitulate and say that when you are asked what you heard at the convention, you can say that you heard one man make a plea for conservatism in obstetrics."

—Skemp in Wisconsin Med. Jour.

MEDICO-LEGAL DISABILITIES—NO. 1.

A disability is a recognizable and measurable disturbance of function or change in the character form or type of tissue which reduces the capacity to do.

1. A disability may result immediately from force without other contributing factors.
2. A disability may result from force by aggravating a pre-existing condition.
3. A disability may result in which disease cooperates with the force.
4. A potential disability is a disability which will with reasonable certainty supervene.

—Czar Johnson, Lincoln.

DERMATOLOGIC HINT NO. VII

Mucous membrane cancers are never basal cell type and are resistant to treatment.

—Donald J. Wilson, Omaha.

OBSTETRICAL AND GYNECOLOGICAL HINTS. NO. VII

The curette has become a dangerous weapon in many hands, particularly is this true in the treatment of abortion. If it is good practice to curette a boil, then it is equally good to curette an infected uterus.

—Harold S. Morgan, Lincoln.

EDITORIAL PARAGRAPHS

It has been demonstrated that tularemia may be contracted from the sage hen, as a host.

Dr. R. E. Farr, Minneapolis, who did a great deal to popularize local anaesthesia and published a book on the subject died last month.

A Nebraska physician issued a public statement to the effect that he had cancelled all outstanding accounts of his debtors. Most of us have done that in times past in another way.

New *Journal* advertisers are Kansas City Southwest Clinical Society, Tulane University, F. A. Davis Co., and the David Nichols Co. Read the ads and patronize those who patronize the *Journal.*

A Bone and Radiological Conference will be held September 19-24 at Johns Hopkins University under the auspices of the Surgical Pathological Laboratory. A cordial invitation to attend is being broadcast.

The insignia of the Commander of the Crown of Italy was awarded to Dr. Morris Fishbein, editor of the *Journal of the American Medical Association* for his services to Italian medicine and physicians. The entire medical profession will applaud.

It is interesting to note that incidental to the World war eight times as many medical officers were decorated than non-medical officers. A greater percentage of medical officers gave up their lives as a result of the war than of non-medical officers.

Anthrax among cattle is again prevalent in the northern part of Nebraska, some five hundred cases having been reported. Two cases of anthrax among humans have been reported. All physicians should read up on the disease and be prepared to recognize it.

A new racket with the physician as a background is reported from Omaha. Learning the names of a number of persons who owed bills to a certain physician, the racketeer called on the parties as a representative of the doctor and offered to cancel their bills if half were paid. He was arrested.

What appears like an attempt to graft the estate of the dead has come to the surface in one of the counties of the state. Two claims totalling $25,000 have been filed against the estate of a surgeon who died early this year, the claims involving alleged malpractice in the treatment of a fractured arm, incurred June 22, 1931.

A baby clinic was held at Hastings in connection with the county fair early in August and over 200 babies were examined during the three days, jointly by the county medical society and the 4-H organization. A health contest sponsored by the Otoe county fair was held, the winner to be sent to the Health contest at the State Fair.

Dr. A. E. Bulson, Fort Wayne, editor of the *Journal of the Indiana State Medical Association,* died July 17, of carcinoma, aged about sixty-five years. He was one of the foremost state medical editors and had held this position twenty-two years. He was vice speaker of the House of

Delegates of the American Medical Association at the time of his death.

Hello, you Omaha medical colleges! Can it be possible that you teach "intestinal flu" or "intestinal influenza" in your curriculums? We fail to find the terms in any medical books. A doctor is supposed to be an educated gentleman or lady and is supposed to use dignified language in the presence of his patients and to call diseases by understandable terms. "Flu" means nothing and "intestinal flu" means less than nothing.

The federal and state governments are coöperating in holding Indian clinics on the reservations of the several states. During the past month a clinic was held at the Santee Agency in Nebraska. A corp of eight physicians, six nurses and seven clerks make up the personnel of the clinic. The purpose of the clinic is two-fold: First, the state and federal governments want to get a picture of the physical American Indian; second, they want to help the American Indian take care of his physical self.

The Supreme Court of Nebraska in the case of Cook vs. Moats stated that a physician of one school may testify as to the correctness of the diagnosis of a case which a physician of another school treated, where the diagnosis is the same in all schools of medicine, or where a condition exists that should be recognized by any physician. A physician of any school, on learning that a breast had been removed "for lumps" would suspect there had been a cancer and would know that a cancer might develop on the bones of such a patient. The crux of the case hinged on the fracture of the femur which resulted from manipulation, the manipulation having been undertaken to relieve a painful hip. X-ray pictures taken after the fracture developed a carcinoma of the bone.

It is announced that pending the appointment of a successor to the late Dr. Hermann von W. Schulte, dean of the Creighton university school of medicine, duties of the dean's office will be performed by Rev. John J. McInerny, S. J., regent of the schools of medicine, dentistry, pharmacy and nursing. Father McInerny will be assisted by Dr. B. M. Riley and Dr. H. P. Gerald. Dr. Riley, professor and head of the department of medicine and secretary of the administrative board of the medical school, has been named acting chairman of the board, a position held by Dr. Schulte, and will have charge of affairs relating to the clinical years of study. Dr. Gerald, professor and head of the department of pharmacology and chairman of the junior council, will have charge of the pre-clinical years.

Dr. Rongy, prominent New York City practitioner, places some of the blame for the cost of medical care squarely on the shoulders of the general practitioner:

"The methods of medical practice which obtained during an era of prosperity can no longer continue," Dr. Rongy says. "The lavish expenditures, which prevailed in the treatment of the sick, will no more be possible.

"The family doctor, to a large degree, is responsible for the tremendous and very often unnecessary hospitalization of patients throughout the country. Many a patient who could just as easily be cared for at home is sent to the hospital. This generally proves costly to the patient, and very often he is unable to meet his obligation to the physician."

The doctor is correct. The average general practitioner sends too many patients with relatively simple ailments to the hospital. It is the duty of the general practitioner to care for his people at the homes when that is practicable.

INFANTILE ECZEMA: STUDY BASED ON ONE HUNDRED AND SIXTY CASES

Francis Scott Smyth, San Francisco, Katherine M. Bain, St. Louis, and Minnola Stallings, San Francisco (*Journal A. M. A.*, Oct. 31, 1931), consider eczema as the response of the skin to irritation. The source of that irritation may be single or multiple, related to local infection, or cold or heat, or to intolerance of an allergic nature. The allergen frequency is not entirely explained by contact but probably on some immunochemical mechanism. While skin tests are often of great value, they rarely develop before the fourth month and may be lacking entirely. In other words, the capacity to form skin tests and the clinical reactivity are independent variables but frequently related. The skin of infants is particularly susceptible to trauma and to sudden changes of temperature. Such injury may itself establish a vicious circle. With increasing age this may entirely disappear. In other instances allergy must be considered as an additional factor. One hundred and sixty patients are surveyed by the authors with regard to the various factors. On the basis of their observations they believe that in the treatment of eczema the diet must not be so restricted as to prevent normal nutritions, since sweeping restrictions may be dangerous.

NECROLOGY

Lawrence M. Shaw, Osceola, Nebr.; native of Monticello, Iowa; Medical Department, Iowa State University, 1889; prominent member Nebraska State Medical Association for many years; councilor for a number of years of the Sixth Councilor District; president, Nebraska State Medical Association, 1908-1909; constructive citizen interested in all civic affairs of his community; a man of most pleasing personality beloved by all with whom he came in contact; in failing health for several years, died suddenly of coronary occlusion, August 15, 1932, aged sixty-four years.

LAWRENCE M. SHAW, M. D.

A widow, two daughters and two sons survive. The daughters are married and living at Long Beach, Calif.; one son, Marion, is a regent of the Nebraska State University; Lawrence is assistant United States District Attorney for Nebraska.

Emma Sams-Warner, native of Mingo, Iowa; Witten, S. D.; Keokuk Medical College, in the early eighties; widow of Dr. Albert S. Warner; in practice at Springview and Butte, Nebr., from 1882 until the death of her husband, Dr. A. S. Warner, in 1908; the first county superintendent of Boyd county; died July 23, 1932, aged about seventy-two years. She leaves a son and daughter.

Walter N. Ramey, Lincoln, Nebr.; native of Georgetown, Ohio; Eclectic Medical College, Cincinnati, 1903; practitioner at Adams, Nebr., for eight years and since then had devoted himself principally to surgery in Lincoln; part owner of the former Rameythenium hospital; on staffs of St. Elizabeth and Bryan Memorial hospitals; member, Nebraska State Medical Association; died suddenly, August 11, 1932, aged sixty-six years. A widow and daughter survive.

Douglas E. Hansen, Nehawka, Nebr.; native of West Point, Nebr.; University of Nebraska College of Medicine, 1929; member, Nebraska State Medical Association; was drowned while attempting to cross a flooding stream horseback, in response to a call, August 12, 1932, aged about twenty-eight years. He was unmarried.

Life is sweet just because of the friends we have
made and the things which we share.
We want to live on, not because of ourselves, but
because of the people who care;
It's giving and doing for somebody else—on that all
life's splendor depends.
And the joy of the world, when it's all added up, is
found in making of friends.

—Anonymous.

HUMAN CONVALESCENT SERUM AVAILABLE FOR TREATMENT OF INFANTILE PARALYSIS

The Infantile Paralysis Commission of the Omaha-Douglas County Medical Society has been able to collect a limited amount of human convalescent serum for treatment of pre-paralytic infantile paralysis.

The commission will furnish this serum to the practitioner to be used before the onset of paralysis.

—Floyd Clarke, M. D., chairman Infantile Paralysis Commission, Omaha-Douglas County Medical Society.

TUBERCULOSIS ABSTRACTS

When the idea of periodic health examinations was proposed a few years ago, it was hoped that many cases of early tuberculosis would be discovered by that means. Experience has somewhat dampened this early enthusiasm. This disappointment, however, does not warrant the conclusion that the periodic health examination cannot serve the hoped-for end. The reasons why better results were not achieved were analyzed by a special committee and published in "The Health Examiner," a publication of The Greater New York Committee on Health Examination.

TUBERCULOSIS AND THE HEALTH EXAMINATION

In spite of much popular education the majority of cases of tuberculosis are not discovered until the disease is already well advanced. Williams and Hill, who studied the experiences of 1,499 patients in tuberculosis sanatoria, found that 12% on admission to the sanatorium were classified as minimal tuberculosis, 43% were moderately advanced, and 45% were far advanced.

The family doctor is on the firing line. The early symptoms of tuberculosis are usually indefinite and the patient first of all consults the doctor "around the corner." We cannot, however, always charge the delay in making a diagnosis to the doctor. More frequently the patient is himself responsible for the delay or the disease itself may be so insidious as to cause no alarming symptoms until the advanced stage has been reached. Williams and Hill found that of the 1,499 patients interviewed, 33% sought medical advice within one month after the first symptom appeared; 29% allowed a period of one to five months to elapse before going to the doctor; 9% waited from six to eleven months; 24% delayed from one to twenty years.

DELAY IN DIAGNOSIS

Tuberculosis organizations have repeatedly given forceful publicity to the early symptoms of tuberculosis including the urgent advice "to let your doctor decide." Such publicity almost invariably calls forth from certain laymen the criticasm that the doctor is incapable of deciding. While such comments are doubtless unfair, they do raise the question as to how promptly the diagnosis is made by the physician, once the patient has come to him.

Williams and Hill found that the physicians took less time to decide that their patients had tuberculosis than the patients required to become aroused to their need of medical advice. At least 43% of the group were diagnosed within a month of the first visit and almost one-half of these were told they had tuberculosis at the first consultation. This record is distinctly commendable. The less favorable side of the picture is that 16% of the patients had to wait a year or more before they were told they had tuberculosis.

A more severe test of the ability to make diagnosis early may be made by analyzing only the group diagnosed as "minimal," of which there were 181 (out of the total of 1,499). Of this minimal group 70 came to the doctor within one month of the appearance of the first symptom. Twenty-six (37%) of them were diagnosed within the first month and 15 (21%) waited a year or more before a diagnosis was made.

What is the hope of discovering early tuberculosis among patients who come complaining of no particular symptom but simply for a health examination? The danger signs are frequently overlooked, perhaps because doctors are not always "tuberculosis conscious." The early signs of tuberculosis (with the exception of hemoptysis and pleurisy) seldom direct attention forcibly to pathological changes in the lungs. The symptoms are usually vague and indefinite. Lawrason Brown has said it might be well for every doctor to hang a sign in his office reading "Remember Syphilis and Tuberculosis" for these are the two great simulators of other diseases. It is true that one should approach each patient with an open mind and make deductions only from the findings, but since we "see what we know" it is certainly not amiss to keep in the background of one's mind the possibility of tuberculosis in every case.

FINDING TUBERCULOSIS IN YOUTH

To be "tuberculosis conscious" is particularly necessary when examining youngsters in their late teens and early twenties. The dramatic rise of the tuberculosis death rate in the age period 15 to 25 contrasted with the low rate during early childhood, suggests that adolescence is for many the transition period; indeed the critical period for many who develop tuberculosis.

Most cases of adult type tuberculosis represent a super-infection on previously infected soil. In the adolescent period the sleeping embers of tuberculosis seem to burst into flame within a relatively short time. Then it is that we should be unusually alert for any danger signs of developing tuberculosis. Nor should it be forgotten that certain types of tuberculosis progress rapidly, as for example the subapical type in which the disease seems to develop acutely in the lung region immediately below the clavicle. From that focus it may spread or gradually become chronic, and the suspicion of some is that apical type generally considered to represent very early pathological involvement, is but the remains of a subapical, acute process. Other forms of acute development are the miliary and bronchopneumonic types.

HISTORY AND PHYSICAL SIGNS

Pulmonary tuberculosis may exist without any suggestion of ill health. While the history at best can be only suggestive, a careful history-taking is important. Underweight is no measure of the presence of tuberculosis, although rapid loss of weight is very suggestive. Of great significance is any suspicion that the patient has been in contact with a case of tuberculosis in the family, particularly if exposure has taken place during childhood. The constitutional symptoms such as fever, undue fatigue, rapid pulse, loss of weight, night sweats, draw one's attention to no special organ. Localizing symptoms such as cough, expectoration, hemoptysis, pleurisy, focus our attention on the lungs. Hemoptysis and pleurisy with effusion are strongly presumptive. If there is one typical symptom of tuberculosis it is fatigability. The more obscure the fatigability is, the greater is the suspicion that tuberculosis is its cause.

Skill in interpreting physical signs of tuberculosis lesions in the lungs depends on an understanding of the pathological mechanism. The variations are too many to discuss here. One general principle is that rales in the upper segments of the lungs warrant the presumption of pulmonary disease, probably tuberculosis. The nature of the rales whether fine, crepitant, or moist, makes little difference—any rale that persists after the patient coughs should excite the suspicion that tuberculosis is present. To elicit rales the patient is instructed to cough slightly at the end of each expiration. Rales, if present, will be heard immediately after the cough and perhaps at the beginning of the next inspiration. The time has passed when we wait for the finding of tubercle bacilli before venturing a diagnosis. The sputum should be examined repeatedly, but a negative finding in no wise excludes the presence of early tuberculosis.

In all instances in which the chest examination reveals abnormal signs, a radiograph should be made. In patients with suggestive symptoms and negative physical signs, a radiograph should also be made, for some early lesions can be discovered only in this way.

Should the tuberculin test be included Early statistics created the impression that all adults and nearly all children reacted positively to the test. For that reason the value of the test was unwarrantedly discounted. Later observations have shown that infection is by no means so widespread. A positive reaction in an adult is of scant significance, but a negative reaction speaks volumes; it almost certainly excludes tuberculosis.

A GROUP DISEASE

Tuberculosis should be regarded as a group disease. Hence when a case of tuberculosis has been discovered the entire family should be examined, not only at that time of discovery of the active case, but also periodically thereafter. The examination of the children should include the tuberculin test and, if the reaction is positive, a radiograph. In examining contacts, one should not omit the older persons of the household. It happens only too often that the grandmother with a "summer cough" or the elderly uncle with a "bronchitis," harbor in their fibrotic lungs tubercle bacilli which they excrete over a period of years without ever being aware of it.

Periodic health examinations should be one of the best case-finding methods known. What is necessary is an understanding of this protean disease, a constant awareness of it and thoroughness in the ordinary techniques known to every doctor.

—The Health Examiner, April, 1932.

THE SOCIETIES

The July meeting of the **Madison-Six County Medical Society** was held at the Hotel Norfolk on the 19th, one of the hottest nights of the summer. Thirty-five attended the meeting. The program, largely self-explanatory, follows:

"Gastro-Intestinal Diseases," Dr. Oliver C. Nickum, Omaha.

"Hemorrhaging Women," Dr. Palmer Findley, Omaha.

Twenty-nine members of the newly formed **Sixth Councilor District Medical Society** met at the Windsor Hotel, Seward, for a dinner and scientific meeting, July 24.

Dr. R. A. Moser, Omaha, gave a paper on "Blood Diseases"; Dr. Earl C. Sage, Omaha, a paper on the "Uses of Forceps in Obstetrics"; Dr. J. J. Hompes, Lincoln, gave an interesting moving picture talk on his recent trip to India.

The **Southwestern Nebraska Medical Society** gave a picnic at Kilpatric reservoir near Imperial, July 28.

HUMAN INTEREST TALES

Dr. Landon Gant has located at Creston.

Dr. Roland Tyson has located at Murray.

Hershey, Nebraska, is again calling for a physician.

Dr. E. R. Hays, Falls City, visited New York City in July.

Dr. and Mrs. Rasck, Ainsworth, enjoyed a vacation in Denver.

Dr. Peter Gillespie, Wymore, is recovering from a minor operation.

Dr. W. W. Claybaugh, formerly of Union, has located at Springfield.

Dr. and Mrs. M. E. Lathrop, Wahoo, motored to Colorado, last month.

The office of Dr. D. L. Abbott, Sidney, was robbed of narcotics recently.

Dr. and Mrs. J. L. Mace, Hastings, motored to Colorado points in August.

Dr. J. L. Magill, Holdrege, visited in Canton, Ohio, the fist part of August.

Dr. Jesse Taylor and son spent part of August in Denver and the Rockies.

Dr. M. P. McNeill, formerly of Laidwater, Texas, has located at Harrison.

Dr. F. G. Kolouch, Schuyler, has returned from the Jirasek clinic at Prague.

Dr. J. L. Barritt, for some time located at Oatman, Nev., has located at Union.

Dr. R. S. Wycoff, Lexington, spent six weeks at Coolidge, N. M., on a ranch.

Dr. Arthur Abts has located at Humboldt in succession to Dr. F. A. Nelson.

Dr. Albert Schwedehelm, Creighton, took a vacation tour through the Black Hills.

Dr. H. L. Clarke, Jr., North Platte, enjoyed a fishing trip at Red Feather, Colo.

Dr. Mildred Clark, Omaha, was reported under a surgeon's care early in August.

Secretary R. B. Adams, Lincoln, spent the month of August in the Canadian woods.

Dr. F. M. Tushla, recent interne at St. Josephs, Omaha, has located at Auburn.

Dr. Rachel Long, Holdrege, underwent a serious eye operation at Denver last month.

Dr. E. O. Liston, Elmwood, spent some time with his family at a Michigan resort.

Dr. and Mrs. M. H. Carrig, Stuart, motored to Indiana and Illinois early in August.

Dr. and Mrs. E. H. Worthman, Louisville, spent their vacation at Guernsey, Wyo.

Dr. and Mrs. E. M. Farquhar, Minatare, visited relatives in California in August.

Dr. Clyde Roeder, Omaha surgeon, is spending two months visiting European clinics.

Dr. and Mrs. George Hoffmeister, Imperial, spent several weeks in the Colorado Rockies.

Dr. E. C. Foote and family, Hastings, spent several weeks in the Poudre Canyon, Colorado.

Dr. and Mrs. C. B. Edwards, Kearney, motored to Chicago and the Minnesota lakes in July.

Dr. and Mrs. R. E. Johnson, Wausa, fished in Minnesota lakes near Alexandria last month.

Dr. T. J. Kerr, North Platte, has just recovered from a broken leg sustained in the rodeo.

Dr. Lincoln Riley, Wisner, visited his son, Dr. W. K. Riley, at Fort Lyons, Colorado, in August.

Dr. and Mrs. Claude Uren and family, Omaha, spent three weeks in the Black Hills, in August.

Dr. James W. Carr, formerly of the State Hospital at St. Peter, Minn., has located at Benson.

Dr. and Mrs. W. E. McBain, Toledo, Ohio, visited home folks at Minden the latter part of July.

A case of instruments was stolen from the automobile of Dr. F. S. Tennant, Stanton, recently.

Dr. and Mrs. E. C. Hanisch, St. Paul, motored to points in Iowa and South Dakota the last of July.

Dr. O. F. Lang and family, Falls City, motored to California the last week in July to spend a month.

Dr. Jack Taber, Omaha, has become associated with Dr. E. H. Dwyer, Gordon, in the practice of medicine.

Dr. F. H. Morrow and sons, Columbus, made a vacation trip to Yellowstone Park the latter part of July.

An auto belonging to Dr. R. J. O'Donnell, Omaha, was stolen from a parking place in Columbus, recently.

Dr. and Mrs. E. G. Barnhart, Omaha, motored to points in Minnesota and the Black Hills, during August.

Dr. and Mrs. C. C. Barr, Tilden, drove to Carrollton, Mo., with their daughter, a nurse at the Carrollton hospital.

Dr. J. W. Youngman, formerly of Hendley, but for the past one or two years in retirement, has located at Paxton.

Dr. W. N. Hahn, Potter, accompanied by his wife, has gone to Vienna for special work in eye, ear, nose and throat.

Dr. V. V. Talcott, Republican City, lost his pocket cash to a sneak thief who ransacked his trousers while he slept.

Dr. A. A. Bald and family, Platte Center, spent the greater part of a vacation in the Jackson Hole country in Wyoming.

Dr. H. M. Hepperlin, Beatrice, submitted to another serious operation recently and is reported convalescing satisfactorily.

Dr. and Mrs. Wayne Waddell, Cleveland, Ohio, visited the former's parents, Dr. and Mrs. J. C. Waddell, Beatrice, last month.

Dr. Olin J. Cameron, formerly of Ann Arbor, Mich., has become associated with Dr. C. C. Tomlinson, Omaha, in the practice of Dermatology.

It is stated that the Doubleday Doran Co. is about to publish a volume for popular circulation by Dr. Palmer Findley, Omaha, entitled, "The Story of Childbirth."

Dr. C. A. Brown, some years ago located at Brownville, later located successively at Cotesfield and North Loup and at some point in Iowa, has returned to Brownville.

Dr. F. A. Nelson, for the past six years in practice at Humboldt, has entered government service and will be located on the Shoshone reservation at Forsythe, Montana.

Dr. W. E. Rose, Kearney, delegate to national convention of Elks at Birmingham, Ala., won the golf tournament championship and was awarded 12 registered golf clubs.

Dr. J. M. Willis, McCook, surgeon and aeronaut, suffered a plane crash recently when the motor failed. Neither he nor his daughter who was with him, suffered serious injuries.

Dr. and Mrs. A. L. Miller, Kimball, went to Los Angeles for the Lions International convention and the Olympics. The doctor is the recent past president of the Nebraska Lions.

Dr. H. L. Clarke, Homeopathic physician of Fairbury, never connected with organized regular medicine, celebrated fifty years of practice recently and was accorded a gold diploma from his New York alma mater.

A young man consulted a physician about "tobacco heart," which he thought he had contracted by excessive smoking. "Doctor," said he, "do you believe that the use of tobacco tends to shorten a man's days?" "Do I," exclaimed the doctor, "I know it does. I tried to stop once, and the days were ninety hours long."

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CONTENTS

Page

Pernicious Vomiting, Earl C. Sage, M. D..... 413
Nephritis in Pregnancy, Charles W. Moon, M. D. 417
Pre-Eclampsia and Eclampsia, Leon S. McGoogan, M. D........ 419
Presumable Toxemias, Lloyd O. Hoffman.... 422
Disease of the Thyroid Gland, Byron B. Davis, M. D........ 425
Efficiency in Medical Practice, Francis W. Heagey, M. D., F. A. C. P........ 431
An Introspection of the Profession, Clayton Andrews, M. D........ 434
A Modern Viewpoint of Traumatic Epilepsy, K. S. J. Hohlen, M. D........ 436
The Present Status of Botulism in Food Poisoning, Charles M. Swab, M. D., and Herbert F. Gerald, M. D........ 438
Surgical Procedures on the Sympathetic Nervous System in the Treatment of Peripheral Vascular Diseases, Walter D. Abbott, M. D........ 443
Accuracy of Biologic Tests for Pregnancy, B. Carl Russum, M. D........ 446
Myocardial Versus Valvular Defects, George W. Covey, M. D........ 448
The Diseased Gallbladder, Earl G. Johnson, M. D. 450
Drug Idiosyncrasy Due to the Phenyl Group, Edward S. Maloney, A. B., M. D........ 452
Massive Doses of Antitetanic Serum: Case Report, Lucien Stark, M. D........ 452

EDITORIAL—

October 454
Group Insurance Cancelled and Discontinued 454
Premedical Education Requirements...... 454
Lengthy Papers 455
Editorial Wisdom is Challenged........ 455
Distinguished Service Medal Awarded to Dr. A. F. Tyler........ 455
The Elkhorn Valley Society Meeting...... 456
Budgeted Medical Service........ 456
A Visit to Mound Builders Tombs.......... 457
Social Insurance Impossible to Abolish When Once Established........ 457
Dermatologic Hint No. VIII........ 459
Obstetrical and Gynecological Hints. No. VIII 459
Medico-Legal Disabilities 459
Editorial Paragraphs 459
Necrology 460
Tuberculosis Abstracts 461
The Societies 465
Human Interest Tales........ 462

A Symposium of Modern Views on the Toxemias of Pregnancy

PERNICIOUS VOMITING*

EARL C. SAGE, M. D.,
Omaha, Nebr.

Pernicious vomiting is the subject assigned to me in this symposium on "The Toxemias of Pregnancy". As this is the first paper in this group, it might be well to recall that Williams(2) gives the following groups of toxemias of pregnancy:

1. Pernicious vomiting.
2. Acute yellow atrophy.
3. Nephritic toxemia.
4. Pre-eclampsia.
5. Eclampsia.
6. Presumable toxemias.

Wesselow and Wyatt(2), the first a chemical pathologist and the latter a London obstetrician. state that the toxemias of pregnancy fall under three heads:

1. Pernicious vomiting, to which is closely allied acute yellow atrophy.
2. Eclampsia and the so-called pre-eclamptic state.
3. Nephritic toxemias.

Few marked conditions have afforded a more fertile field for speculation, and in few is the fact more meagre. Peckam(3) likewise states there is no field of obstetric research concerning which more divergent opinions are held, nor is there any syndrome for whose relief more varieties of treatment are recommended. Various facts which have to be accounted for, by an acceptable theory, are the following

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*Part of an obstetrical symposium presented at the Nebraska State Medical Association, Lincoln, May 24, 25 and 26, 1932, entitled "Modern Views on the Toxemias of Pregnancy".

1. Toxemias of pregnancy are associated with presence of the products of conception in the maternal organism.
2. Removal of the products of conception usually leads to rapid recovery.
3. The condition is more frequent in primipara than multipara, and in the majority of cases does not recur in subsequent pregnancies.
4. Pernicious vomiting occurs in the first half of pregnancy, while the pre-eclamptic state and eclampsia are complications of the last trimeter.

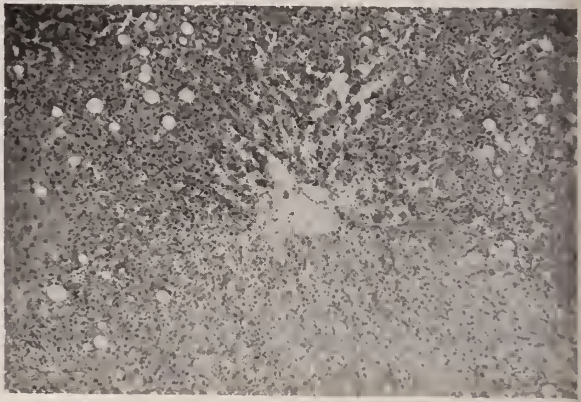
TERMINOLOGY AND INCIDENCE

The great difficulty in the discussion of pernicious vomiting lies in the definition of what is meant by the term. If we assume that in all cases of pernicious vomiting, death ensues unless the pregnancy is terminated, the disease is rare in this country; if, on the other hand, all cases in which excessive vomiting occurs during pregnancy are regarded as definitely toxemic, this disease is comparatively common. Under the term "hyperemesia gravidaram" it is possible to include any condition of vomiting in excess of the "morning sickness" of normal pregnancy, which may be due to indiscretions in diet, constipation or neurosis.

Peckham has found that vomiting of pregnancy, severe enough to demand admission to the hospital, occurs about once in every 150 pregnancies and severe cases occur once in 400 pregnancies.

ETIOLOGY

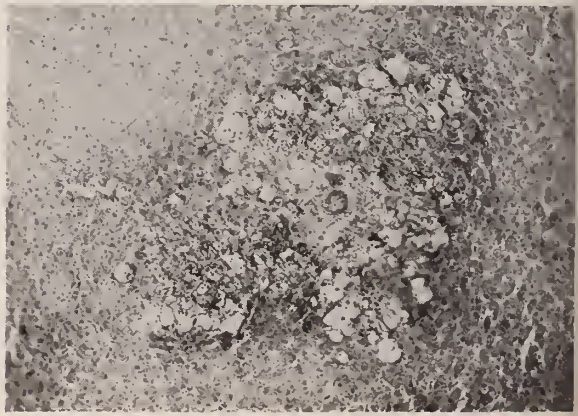
The etiology of vomiting of pregnancy is still unknown. From the evidence to date it appears that a metabolic disturbance, particularly in the carbohydrate chain, may perhaps be an important etiological factor. Dehydration, starvation, and incomplete oxidation of fatty acids certainly play an important role in the production of the chemical changes noted in the blood and urine of a patient suffering from severe vomiting of pregnancy. These abnormal findings are usually a high ammonia nitrogen content in the urine, and a slightly increased non-protein nitrogen, decreased chlorides, increased uric and lactic acids, and accumulation of acetone bodies in the blood. (See Fig. 1 and 2). Harding and Duncan(4)(5) of the University of Toronto, Titus, Hoffmann and Givens(6), working with this problem under the John C. Oliver Memorial Research Foundation to St. Margaret's Hospital in Pittsburg; Speidel of Louisville, Kentucky, and Schwarz and Dieckmann and Crossen(7) of St. Louis, are all advocates of the theory that nausea and vomiting of pregnancy is due to a deficiency of glycogen in the maternal liver, or in the idea that the glycogen content of the maternal liver is too low for the requirements of the pregnant organism. This theory makes the fewest assumptions and is consistent with the greatest number of facts.



1. Hyperemesis gravidarum.

Necrosis in the central portion of the liver lobules and marked fatty degeneration of the liver lobule.

It is questionable if we are justified in speaking of a typical liver lesion of vomiting because there have been superimposed the effects of marked starvation and dehydration, which in themselves produce typical histological changes.



2. Eclampsia.

Bell throws doubt on any characteristic liver lesion in eclampsia such as "peripheral necrosis of the liver lobule." He observed passive congestion, localized infiltration, acute yellow atrophy, infarction, hemorrhagic necrosis, and cellular infiltration of the portal spaces.

Mack(8) suggested that a toxin or poison produced by the fetus or placenta may be the cause of vomiting of pregnancy, and that normal pregnant women become immune to this toxin. No such toxin has, however, been isolated, and it is conceivable that it may prove to be an intermediate or end-product of metabolism rather than a foreign poison. It certainly seems that the neurotic element, as a factor in the etiology of the disease, has been greatly overemphasized in the past. All cases of vomiting of pregnancy are undoubtedly toxemic in origin, although they may vary greatly with respect to the role which a neurosis may play in the course and prognosis of the disease.

Peckham and his associates at Johns Hopkins feel that vomiting of pregnancy is a toxemic process based on the fact that in every pregnancy, whether normal or not, histologic evidence can be adduced to show that fragments of chorionic villi and detached masses of chorionic epithelium can be demonstrated in the maternal vessels. In other words, there is an invasion of the maternal blood by fetal elements. Normally this foreign protein is broken down by the tissues of the mother and is rendered innocuous. On the other hand, if the process be interfered with, it seems justifiable to suppose that toxic symptoms may develop.

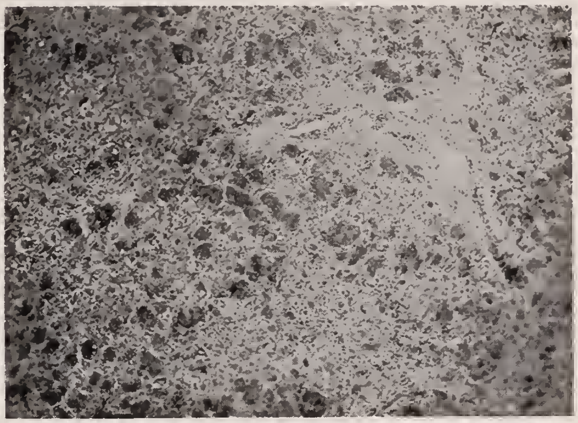
It should be appropriate at this time to call attention to the conclusions drawn by Peckham, who reveiwed 60 cases of hyperemesis gravidarum occurring at Johns Hopkins hospital. He found that:

1. Women in the upper walks of life are more prone to the disease, but negro women are not immune to it. There was an equal number of cases in each race—white and black.
2. The age and parity are not predisposing factors.
3. Neither the time of onset, duration of vomiting, nor loss of weight indicates the severity of the disease nor affords a safe guide for prognosis.
4. A high pulse rate usually indicates severe vomiting but does not necessarily imply a serious prognosis. On the other hand, a low pulse may persist in a severely ill patient.
5. Fever due to dehydration is frequent.
6. The presence of urinary albumin is frequent but is of slight prognostic importance (albumin was present in the urine of 40% of the patients).
7. Acetone bodies are frequently absent from the urine in severe cases.
8. A high ammonia coefficient is usually seen, but a low one does not necessarily indicate a mild case.
9. In mild vomiting of pregnancy, the blood chemistry is not essentially changed, although the uric acid tends to rise and the chlorides to fall.
10. In most patients isolation in a hospital and suggestive treatment will effect a cure, but exceptionally all therapy fails and the induction of labor is indicated.
11. A considerable percentage of patients abort spontaneously, sometimes after cessation of symptoms, a phenomenon which requires explanation and study. 25.6% of this series aborted spontaneously at varying intervals after leaving the hospital, one was a case hydatidiform mole.

PATHOLOGY

The use of the term "toxemia" has arisen from the recognition of the wide distribution of the lesions in the body, and from the fact that the damage is of a degenerative rather than an inflammatory character. In fatal cases of pernicious vomiting and eclampsia, degenerative changes are found in the liver and kidney. We have been taught that the characteristic liver lesion in pernicious vomiting is a central necrosis of the lobule, while in eclampsia the degenerative process begins in the periportal area. (See Figure 3).

Stander(9) says "In many fatal cases of vomiting of pregnancy, characteristic lesions are present in the liver, which show as profound necrosis of the central portion of the lobule. Although many writers regard this lesion as characteristic of vomiting of pregnancy, it is conceivable that starvation, rather than the vomiting of pregnancy, may be the underlying cause of these hepatic lesions. On the other hand, we know from the work of Opie(10) and others that central and midzonal necroses in the liver are usually the result of systemic poisoning, from which it would appear that vomiting of pregnancy may rest on a toxic basis".



3. Acute Yellow Atrophy.

Central necrosis of the liver lobule is the characteristic histological picture, although necrosis may extend throughout the lobule in the severe type of this disease. The interlobular spaces are not affected, the B.V. and bile canals maintaining a normal appearance. Grossly the liver is often reduced to less than half its normal size due to hepatic atrophy.

Bell(11) states that the necrotic liver lesions seen in pregnancy toxemias do not show the differences in the various clinical types of toxemias which Williams believes to be characteristic of them. That is to say that the necrotic areas are by no means limited to the center of the lobules in hyperemesis and acute yellow atrophy nor to the periphery in eclampsia. Titus and his associates agree with this.

The genesis of the necrotic liver lesions has been explained as being the result of an excessive glycogen depletion of the hepatic cells, now known to be followed by a fat replacement, tantamount to necrosis. This may be duplicated experimentally by starvation, and is to be seen to a lesser degree in certain of the wasting or "hunger diseases". (Opitz(12)).

We feel that there is an open question as to whether the liver lesions seen in pregnancy toxemias have distinctive characteristics. In Bell's cases there is little agreement in the liver lesions, which include passive congestion, localized fatty infiltration, acute yellow atrophy, infarction, hemorrhagic necrosis, and cellular infiltration.

TREATMENT

We believe the best plan of treatment in all cases of excessive vomiting of pregnancy is to follow the regime of Titus and his associates as we feel that this condition is due to a depletion of glycogen in the liver.

For that reason we attempt immediately to correct this condition and hospitalize the patient, insisting on isolation. There is an initial period of rest when no food or fluid is given by mouth for from 24-48 hours and the patient should be absolutely at rest in bed until 4 or 5 days after vomiting has entirely subsided. At 8:30 a. m. and 8:30 p. m. daily, an enema is to be given, unless the bowels have moved freely shortly before. This is to be followed by a rectal injection of from one-half to one ounce of warm water (starch water if the bowel is irritable) containing soduim bromide grs. xxx and chloral hydrate gr. x. As the patient begins to improve, the evening dose of sedatives is omitted first and finally the morning dose.

Space does not permit the detailed outline of this treatment but mimeographed sheets will be furnished anyone suffciently interested. Essentially the treatment consists of intravenous injections of 25% glucose, 75 grams in 300 cc of distilled water, continuous enteroclysis of 10% glucose and 2% soda bicarbonate solution, to thoroughly combat any attendant dehydration. If necessary, 5% glucose solution may be given subcutaneously.

Frequent hourly feedings are essential after the initial period of rest and the carbohydrates should predominate. Nourishment should begin at 7 a. m. or earlier if the patient is awake and continued hourly until 10 p. m.

Careful check is made of the urine to determine exactly when acetone and diacetic acid disappear and blood samples may be taken for the estimation of blood sugar and blood alkali reserve.

A dietetic regime is outlined for six days and by this time most of the patients will have shown remarkable progress and be able to eat regular meals. Relapses may occur in the first day or so but after washing out the stomach, the treatment is continued as though nothing had happened.

Constant reassurance and a refusal on the part of all coming into contact with the patient to consider her condition in any way serious, is also routine.

At the Boston Lying In Hospital some such procedure is likewise followed. The patient is put to bed in a private room and isolated. She is carefully questioned as to her fears and troubles calculated to upset her psyche, a careful physical examination is done to rule out other causes for vomiting and she is reassured to the point of the physician making light of her condition. If the patient is much dehydrated she is given tap water per rectum or an infusion. Nothing is given by mouth for 24 to 36 hours. At the end of that time she is given at hourly intervals from 9 a. m. to 9 p. m. a glass of some fluid, alternating at least three varieties. Milk, chocolate, ginger ale, orange juice, strained broth and other liquids may be used, being guided by the patient's preference if she can be persuaded to state any. During this time the emesis basin, glasses and other receptacles are removed from the room, and the nurse enters only at hourly intervals to bring the next ration. Vomiting usually ceases after the first day, rarely does it continue longer than two days. As soon as it is apparent that vomiting has ceased, the patient is placed upon six small meals per day and unlimited fluids again being consulted as to her desires.

CONCLUSION

The "glycogen deficiency theory" of the origin of vomiting of pregnancy is, in brief, that an insufficient carbohydrate intake in the maternal diet plus the sudden and extraordinary demands of fetal and placental growth and uterine hypertrophy cause a glycogen deficiency in the body tissues, especially in the liver. We feel that the best results can be obtained in treating excessive vomiting of pregnancy by the free use of intravenous glucose and frequent small feedings containing a large proportion of carbohydrates.

We have treated a rather large series of cases at the University of Nebraska College of Medicine and in our private practice, by this method, and it has proven efficacious. We have confidence in the success of such therapeutic measures.

From Stander (The Toxemias of Pregnancy)(13).

When called to see a patient suffering from vomiting of pregnancy it is essential first to determine the severity of the disease, and whether starvation and dehydration have entered into the picture. If we are dealing with the results of starvation or dehydration or both, our therapy should be to introduce nutrition and water. If the disease has not developed to this final stage, it is advisable to determine how much, if any, neurotic element is involved and to treat the patient accordingly. It is of course essential that a careful clinical examination of the patient be carried out, in order to determine the presence or absence of such gynecological conditions as retroversion of the uterus, which, when present, should receive attention. Often the correction of such conditions leads to improvement.

As far as treating the actual vomiting of pregnancy is concerned. Stander is of the opinion that the use of glucose or glucose and insulin, where indicated, and the administration of small but frequent meals, gives fairly satisfactory results. It is often advisable to starve the patient for twenty-four hours before instituting the therapy. and it is always necessary to enforce strict isolation. However, we must remember that in a small percentage of cases all therapy may be of no avail and a therapeutic abortion is inevitable. It must be pointed out that we cannot lay too much stress on the value of complete isolation of the patient, especially from all relatives, and of suggestion.

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NEPHRITIS IN PREGNANCY*

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For the purpose of this paper I shall subscribe to the classification of Williams and will take up only that portion, or subheading of "Nephritis during Pregnancy." Leyden in the Zentral Schrift Fur Klin. Med. 1881 recognized that a pregnancy kidney may similate Chronic Nephritis and that a differential diagnosis was difficult and required the utmost care. Undoubtedly the over burdening of a normal kidney during pregnancy leads to the condition known as kidney of pregnancy and therefore it is self evident that a damaged kidney would not carry the load so well in a parallel case, in other words I can state without fear of controversy that women with gross kidney changes, in other words with definite kidney pathology and a history of nephritis do become pregnant. Also there is that other group in whom kidney damage has occurred, usually from acute exanthematous diseases who have so little damage in the kidney structure that the kidney is able to take care of and perform its function during the health of that individual. Now if this woman becomes pregnant this kidney of little damage breaks under the load and that case often is included under some other heading of our classification. We must not forget that it is also possible for a pregnant woman to acquire an acute nephritis during pregnancy. In the pregnancy kidney the degenerative processes probably predominate whereas in nephritis the inflammatory lesions are more prominent. The glomeruli are affected and thus we do not get the return to normal that we do in the kidney of pregnancy.

The most important thing in anticipating these cases is a complete history during our first contact with the pregnant woman during her pre-natal care. For many years I have had the thought that we should extend our pre-natal care and should educate our women to have a complete examination before becoming pregnant, to see if they are fit for pregnancy. If this were done we would have a few cases with definite history of nephritis, and definite findings of kidney pathology to whom we would give the advice that they should not become pregnant.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 24-26, 1932.

Let me emphasize again the necessity of a careful history coupled with a complete urine examination early in pregnancy. The presence of chronic nephritis may be unknown even to the patient until this searching investigation is completed, in order to have some land mark, it has been stated by Kosmak that the presence of one gram per liter of albumin in the urine would be considered as exceeding the normal limits.

Routine chemical and microscopic examination of the urine is of course necessary, not a sink test, and should be supplemented by the examination of twenty-four hour specimen when needed. The functional tests do not seem to be of much value in connection with the toxemias of pregnancy but when there is a suspicion of renal damage they should be done. The nocturnal concentration of urine is easy to observe and its absence may give information of value.

The total nitrogen estimation and the relation to the ammonia nitrogen may be of value. Fishberge states that the non protein nitrogen content of the blood may be raised by: 1. A colesence of an arterosclerotic foci in the kidney. 2. Occurrence of more or less diffuse reaction of the glomerular changes. Plass states that there is no characteristic change in non protein nitrogen content of the blood in pre-eclampsia or eclampsia and therefore a high N P N makes us suspicious of nephritis.

The non protein nitrogen of the blood is usually increased in nephritis and the characteristic feature is that the urea nitrogen constitutes a larger fraction of the non protein nitrogren than in normal blood. Such is also the case in non pregnant nephritis. We also have as a rule a retention of uric acid probably due to ketogenesis and we also have high blood chlorides even in those cases on a salt free diet. It is probably not necessary to mention the value of specific gravity of a twenty-four hour specimen and the comparison of this feature in day and night specimens of urine. The total output is not infrequently overlooked but is of great diagnostic importance as a functional test especially when compared with the intake. These simple functional tests should not be forgotten in the routine management of pregnancy as they can be easily applied under nearly any environment. The value of the catheter in eliminating extra urinary sources of pus, or blood should not be overlooked.

Albumin is usually present in nephritis complicating pregnancy and it is thought that the excretory possibilities for water and salt are considerably reduced. These being retained with our consequent ill effects. In many cases the kidney involvement ceases at this point and in others advanced toxic symptoms indicate an extension of the process grading over into preeclampsia. The most common type of nephritis encountered in pregnancy is that form more or less quiescent which is the common type of Bright's Disease. It must be remembered that this type may possibly develop during pregnancy but the more usual happening is that the lesion was contracted in childhood and remained quiescent until the great functional demands were made on the kidney in pregnancy. With a proper urinalysis and a demonstration of the albumin and casts this type of lesion is not overlooked except in those very slightly developed lesions. This parenchymatous nephritis may allow pregnancy to go on to completion but nevertheless even in mild cases it is a cause of anxiety and calls for careful management of the case. In a normal person an extra quart of water taken at any one time will be excreted in less than four hours, while in nephritis there is a definite delay in excretion. This is such a simple functional kidney test that it may be done under any conditions and should be used by every practitioner caring for such cases. The patient is given a liter of water (in Vienna they use hot tea) and the amount excreted in two hours and every hour for five hours thereafter measured and the specific gravity taken. At the end of six hours, 1000 cc should be excreted and we should have a gradually increasing specific gravity concentrating normally to 1025 or better. Thus a normal chart is:

6 A.M. Pt. voids 300cc Sp gr 1026	Pt given 1000 cc water	8 A.M. voids 350 cc sp gr 1002	
9 A.M. voids 250 cc sp gr 1008	10 A.M. 175 cc sp gr 1016	11 A.M. 125 cc 1024	12 A.M. 100 cc 1028

Water diuretic test in a case of nephritis complicating pregnancy shows:

6 A.M. voids 320 sp gr 1010	1000 cc given	8 A.M. 210 cc sp gr 1007	9 A.M. 90 cc 1012
10 A.M. 72 cc 1011	11 A.M. 85 cc 1010	12 A.M. 90 cc 1011	Total 547

Nephritic toxemia or the super imposition of pregnancy on a chronic nephritis constitutes about 25% of all gestation toxemias. Peckham states that it is very fallacious to discharge a patient following the puerperium who has had symptoms of toxemia even if she has a normal blood pressure. Peckham found that 22% will show signs of nephritis several months later and of course will have aggravated symptoms of toxemia in subsequent pregnancies.

Mussey has attempted to group the nephropathies of pregnancy and calls our attention to Volhaid and Fahrs classification.

A. Pyelitis and Pyelonephritis.
B. Hypertension and Nephritis.
  1. Acute nephritis.
    a. Acute glomerulonephritis.
    b. Acute nephrosis.
  2. Chronic Nephritis.
    a. Chronic diffuse glomerulonephritis.
    b. Chronic Nephrosis.
  3. Sclerosis.
    a. Benign Hypertension.
    b. Malignant hypertension.

The symptoms present in a case of nephritis in pregnancy are usually gradual in most cases and this point is of value in distinguishing it from the renal symptoms in actual eclampsis. Usually the load is not heavy on the kidney during the first half of pregnancy and therefore symptoms in this condition appear in the last half of pregnancy and also attacks more primipara than multipara. It is also more frequent in multiple pregnancies in all probability from the added load. We usually have oedema especially of ankles and legs and in some cases headache and nausea and some slight urine disturbances.

The feeling today of the majority of writers is that our symptoms are caused from a specific toxin affecting the kidney plus the added load which the kidney must carry and not as was thought a few years ago, caused by the mechanical condition such as increased abdominal pressure, etc.

Though the treatment of pregnancy toxemia and nephritis is largely the same it is important to make a diagnosis as early as possible; first to prevent progressive deterioration of the kidneys in a case of nephritis where an additional quota of permanent damage is so readily sustained and secondly to save the life of the fetus by induction of labor as early as possible compatible with its survival.

The great tendency of foetal death in utero in nephritis requires early induction whereas in true pregnancy toxemia there is not the same risk of fetal death and induction need not be considered in the interest of the child.

Of course prophylactic treatment is in this case as it is in other conditions of the greatest value and the guide in our treatment must be on a basis of the recognition of the underlying factors in the individual case. Both laboratory and clinical findings must be properly evaluated.

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PRE-ECLAMPSIA AND ECLAMPSIA*

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PRE-ECLAMPSIA

Pre-eclampsia is essentially eclampsia before the outbreak of convulsions and the onset of coma.

The "how" of these two conditions is fairly well known but the "why" is little if any better known now than it was a decade ago. Pre-eclampsia and eclampsia are still what Zweifel(1) once called them the "disease of theories".

During the five year period 1926-1930 inclusive there were 30 cases of pre-eclampsia admitted to the University Hospital. A study of these cases shows that the disease was evident in 27 of the cases during the last two months of gestation and during the seventh month of gestation in the remaining three cases. The onset may be abrupt, but premonitary symptoms may be present for a number of weeks before the patient presents herself or considers herself ill. In thirteen of the cases the first symptoms appeared prior to the eighth month of pregnancy, in thirteen others during the eighth month, and in four cases during the ninth month. The disease is apparently more common in the multiparae than in the primiparae as eight of the cases were primigravidae and the remaining twenty-two were multiparae. one-half of the latter group having had more than four pregnancies. It is more prevalent in the young woman as 14 of the cases were under 25 years of age. It is not restricted to race or color. Five of the patients were negresses.

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An analysis of the past medical and obstetrical histories shows that nine of the patients or 40.9 per cent of the multiparae had had a previous toxemia of pregnancy either of the so called low reserve kidney type, pre-eclampsia or eclampsia. Four of the patients had had scarlet fever, two had had diphtheriae, and three acute rheumatic fever, all conditions in which renal envolvement may be present. Two patients gave a history of previous nephritis.

A study of the symptoms on admission shows that the predominating ones were edema in 24 instances, headache in 16, dizziness in 7, spots before the eyes in 6, and nausea and vomiting and epigastric pain in 5 instances.

The blood pressure (systolic readings only given here) was on admission to the hospital 140-150 in 4 cases, 150-170 in 12, 170-200 in 7 and over 200 in the remaining 7 cases.

Examination of the urine disclosed albumin in varying amounts in 29 cases and absent in one case. Casts were present in 17 cases, a little more than one-half of the cases. The specific gravity of the urine was 1016 or higher in 23 instances and below 1016 in 7.

The type of treatment of this condition varies with the different clinics throughout the world. All agree, however, on rest in bed, copious elimination with magnesium sulphate orally, and sedatives. The new barbital compounds, especially sodium amytal, have been most highly recommended and have been very satisfactory in our hands as a sedative. If the patient is very restless or if the headache is severe it may be necessary to use morphine sulphate to obtain the necessary lessening of tension. The diet should be of low protein content and contain little or no salt. Sufficient protein should be allowed, i amounts to meet the basal metabolic requirements of the individual. A number of German(2) investigators are using the quartz light on patients suffering from the late toxemias and believe that their good results may be due to the action of the rays on the vessel spasms in the kidney, brain and skin. If the patient does not improve on such a conservative regimen, she should be delivered as promptly as is consistent with the safety of the mother and in a manner which will give the best results. Many times this is obtained only by cesarean section under spinal or local anesthesia (Stander(3), Peterson(4), Gordon(5)). One of our patients refused treatment and was dismissed undelivered, 7 were admitted in labor and were delivered via naturalis, two were induced with Voorhees bag which is often uncertain in its action; ten fell into labor spontaneously and delivered, and the remaining ten or 33% were delivered by cesarean section. Of the 29 mothers delivered, there were no deaths. There were thirty infants, one pair of twins, with 4 foetal deaths, a rate of 13.3 per cent which is higher than the institutions uncorrected foetal mortality rate of 5.9 per cent.

What is the ultimate prognosis for these patients? Many will show signs of toxemia at subsequent pregnancies and others will have permanently damaged kidneys. In a series of 545 consecutive deliveries of toxemic patients at the John Hopkins Hospital(6), eclamptic patients not included, 66.6 per cent were examined four months to four years after delivery and at that time 40 per cent of them were found to have a definite chronic nephritis. This would seem to indicate that chronic renal damage may be a result of the toxemia.

ECLAMPSIA

Stander(3) defines eclampsia "as a symptom complex, resulting from pregnancy, with cerebral phenomena as the most outstanding characteristic". From available statistics he concludes that the disease occurs about once in every 500-800 deliveries although it is higher in obstetrical clinics, at least 1-150, because the cases are referred to the hospital. At the University Hospital there were 9 cases of eclampsia in 1709 deliveries in the five year period 1926-1930 inclusive, or an incidence of approximately 1-200. Seven of the patients were under 20 years of age, one was twenty and the remaining patient, the only negress was 28 years of age. Seven of the patients were primigravidae, one was a secundigravida and one, the negress was in her sixth pregnancy. Two of the patients were in the seventh month of gestation and the remaining seven were at or near term. The two patients not primigravidae, had past histories of previous toxemia. One patient had had scarlet fever, one diphtheria, and one acute rheumatic fever.

The early symptoms may occur at any time and are pre-eclamptic in character until the onset of the convulsion or coma. Occasionally a convulsion will occur without any preliminary phenomena being present. Of our patients, five developed convulsions prior to admission and four after admission, one of the latter having her first convulsion 12 hours post partum.

On admission the predominating findings, excluding the convulsions, were edema and elevated blood pressure, four of the patients having a systolic reading of over 170 and less than 200, and the other five patients having a systolic reading from 120-150. Albumin and casts were present in the urine of all the cases, and the specific gravity was below 1016 in only two instances.

Studies of the organs of patients dying from eclampsia show certain typical pathological phenomena. In the liver there are focal areas of hemorrhagic necrosis and fatty degeneration predominately in the periphery of the liver lobule as a rule. Acosta-Sison(7) in a clinico-pathological study of 38 cases of eclampsia reported that in his cases the liver lesions were "scattered indistinctly in the lobule with a special susceptibility of the central areas". In the kidneys cloudy swelling and fatty degeneration are the rule and Acosta-Sison reported that 38.4 per cent of his cases exhibited lesions of chronic nephritis. There is no doubt that the above changes are the result of eclampsia and not the cause.

As regarding treatment, there are present three schools of thought, (1) the radical. (2) the conservative, and (3) a combination of both.

The conservative school has as its best exponent Stroganoff. The Stroganoff procedure or the procedure as modified at Johns Hopkins is the simplest and therefore the most widely appliable since it may be used in the home as well as the hospital, independent of any elaborate equipment.

As soon as the convulsions have been controlled and the patient is improving from her eclamptic state and if the patient has not already fallen into labor spontaneously, then interruption of pregnancy should be considered. The method used to terminate the pregnancy must be selected with care, and a method chosen which will be consistent with the safety of the mother.

The radical treatment which consists primarily of active intervention during the convulsive state, and usually the cesarean section is selected as the method of delivery, has many advocates. In certain clinics excellent results are obtained. In general, however, the radical method has a maternal mortality about twice that of the conservative method(8).

Stander(3) has suggested that in active intervention some of the poor results might be due to the anesthesia employed for it is well known that any inhalation anesthetic produces in some cases, lesions in the liver similar to those of eclampsia. Some of the newer anesthetics, pernocton(9), sodium amytal(10), and avertin(11) have been used with considerable success in the treatment of eclampsia and their employment as an anesthetic combined with local may reduce the mortality rate of active intervention to that of the conservative method.

Venesection has always been a useful measure, and it is used by both schools. In those cases in which Irving(12) has used it, the mortality was one-third lower than in the group in which he did not employ it. Irving has recently argued that eclampsia is due to a toxin circulating in the blood plasma, and he is undoubtably correct in his assumption. To reduce the amount of toxin present it would be necessary to reduce the plasma, hence venesection, but this also entails loss of blood cells. To overcome this erythrocytic loss he has bled his patients under sterile precautions of 1000 cc of blood into sodium citrate solution. The mixture is centrifuged for twenty minutes, the plasma removed, the cells washed once and then mixed with enough normal saline to make up a liter. This is then reinfused into the patient. Using this method of plasma-phaeresis in conjunction with the conservative method he has reduced his mortality in eclampsia to 5.9 per cent.

Dieckmann(13) has shown that in eclampsia there is a marked hydraemia and that the hydraemia requires for its treatment a procedure which will replace water in the circulation and keep it there. It occurred to him that gum acacia would be the ideal solution for this purpose and he has employed the use of 500 to 1000 cc of a 6 per cent gum acacia solution (200 cc of 30 per cent gum acacia and 800 cc of 10 per cent glucose) with results that so far having been encouraging. This has been used in addition to his usual routine conservative treatment.

According to Titus(14) glucose deficiency offers a rational explanation for most of the phenomena observed in eclampsia. Laferty(15) has shown a definite tendency for the blood sugar level to drop before a convulsion. Therefore glucose in 10 per cent solution should be given intravenously frequently and in large amounts to combat the deficiency and thus prevent a recurrence of the convulsions.

The staff of the department of obstetrics at the University Hospital has followed the middle course in the treatment of eclampsia, combining the conservative and the radical, employing the conservative method but not hesitating to desert it for the radical in case poor results were being obtained with the former.

Of the nine cases mentioned, eight had convulsions prior to delivery, five prior to admission and three subsequent to admission. Five of the patients were treated conservatively, four delivering spontaneously and one required a low forceps. Three of the patients had conservative treatment instituted but two were delivered by cesarean and one by manual dilatation of the cervix and forceps extraction because of failure to improve under conservative therapy. No mothers were lost but five of the infants were lost, four being stillborn and one died on the fourth day on account of prematurity. An infant mortality of 55.5 per cent.

One of the most important factors in the treatment of pre-eclampsia and eclampsia is the prevention by adequate pre-natal care. It is evident that a great deal can be done by careful pre-natal study of all pregnant women whenever possible. The frequent routine examination of the blood pressure, of the urine and of the patient's general condition undoubtedly will lead to the recognition of an impending pre-eclampsia or eclampsia. However, prophylaxis alone cannot entirely prevent these conditions but it will reduce their incidence and their maternal mortality.

De Lee(16) claims that 20 per cent of all women with eclampsia die. Plass in a study of over 10,000 cases reported a 21.7 per cent mortality with radical therapy and 11.1 per cent with conservative therapy. Stroganoff reports a personal mortality of 5.31 per cent. What of the mothers who live? Many undoubtedly are victims of chronic nephritis and the remaining are apparently well. As regards subsequent pregnancy, certainly no woman who has had eclampsia should attempt another pregnancy unless two years have elapsed and unless the renal function is normal.

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PRESUMABLE TOXEMIAS*

LLOYD O. HOFFMAN

When we discuss the presumable toxemias we should consider also that group of conditions which resemble some of the toxemic manifestations—namely, epilepsy, chorea, uremia, salivation, hysterical and cerebral convulsions.

Epilepsy because of the increased frequency of attacks during pregnancy often necessitates a differential diagnosis. Previous attacks, no blood pressure or urinary changes usually make the differential diagnosis easy. However, associated with pre-eclampsia a diagnosis becomes at times very difficult.

Uremia unless seen very early in the pregnancy cannot be easily differentiated. As the treatment is essentially the same as for toxemia—it is of little moment from a differential diagnostic standpoint.

Chorea usually has been present before the onset of pregnancy most probable at the time of puberty. The attack during pregnancy being merely an acute exacerbation of this old condition. The presence of albumin increased blood pressure and certain of the toxic symptoms are frequently present. This syndrome makes for an unusually difficult differential diagnosis. As the mortality in this condition is high, palliative measures should not be persisted in.

Hysterical convulsions are similar in type to the hysteria found in the non pregnant state. There is no cyanosis and rarely is the tongue lacerated.

Brain tumors rarely give their initial symptoms during pregnancy. A careful history plus negative urine and blood findings make possible a differential diagnosis.

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Salivation to a greater or less degree accompanies the nausea and vomiting of early pregnancy. It usually subsides with the nausea and vomiting and responds to the same treatment. An unusual increase of salivation accompanies as a rule oral pathology. Remedial measures give quick relief. Infrequently idiopathic cases may arise. which will not respond to usual remedial measures.

The skin eruptions which are encountered during pregnancy are usually of the dermatitis type —urticaria, herpes, erythemia, impetigo and pruritis. Although these conditions are usually self limiting they are of the utmost concern to the patient while they are present. They do not respond to general treatment for toxemia and can be treated only by local measures.

Herpes accompanies intestinal disorders most frequently and in addition to palliative measures change of intestinal flora plus adequate dietary measures are necessary. Trichomonas vaginalis and similar yeast organisma or infections or infestations of any type which infest the vaginal tract receive a marked impetus to their growth reaction during pregnancy. Glycosuria not infrequently gives a high grade pruritis. We must remember that 98% plus of cases of pruritis of pregnancy are not toxic in origin. It is essential that we very definitely rule out any of the above causes before a diagnosis of toxic pruritis is made. Palliative measures are necessary as a temporary relief.

Purpura occurs more frequently in the puerperium than in the ante partum period. We must differentiate it from haemophylia, scurvy and malaria. The mortality of course is dependent upon the degree of the condition. Blood transfusion is the only worth while method of treatment.

Impetigo is infrequent and unless involving large areas of the body is of little moment.

Urticuria may or may not be toxic. It rarely occurs in individuals who have not had previous attacks. It does not respond to the usual treatment given in the non pregnant state. Whether it is due to some proteolytic enzyme furnished by the foetus or foetal products is unknown. Reports of benefit by a serum treatment or strictly speaking a plasaphaeresis have been given. 200 to 300cc of blood are withdrawn from the patient under sterile conditions with sufficient citrate to prevent clotting. This is centrifuged the serum withdrawn and the cells washed once with normal saline. Normal saline is then added to the cells in the same amount as the serum was withdrawn. This is then transfused back into the patient. This treatment gives rather good results and should be seriously considered with this condition as other methods of treatment usually fail.

Angioneurotic edema, unless limited to the lower extremeties, because of its transitory character is easily diagnosed. In as much as there is no mortality nor morbidity it is of interest only as a point in the differential diagnosis.

I should like to call particular attention to a condition which has been described as toxic multiple neuritis, toxic peripheral neuritis, and toxic neuronitis. Although it was first described in the literature in 1885 and case reports have been made from time to time since, text books of obstetrics and monographs on toxemias give it relatively little attention. Because it is so fatal (30 per cent to 50 per cent mortality), and because it is amenable to early treatment I should like to detail the symptoms.

Toxic neuronitis occurs most frequently in the first or second pregnancy. It is always preceded by vomiting of the pernicious type. Its symptoms usually begin after the vomiting has ceased during the fourth or fifth month. It is characterized by tachycardia, muscular weakness (especially exterior muscles), absence of reflexes: knee, biceps and tendon of Achilles. Stupor, loss of appetite, loss of memory, and blurring of vision, and not infrequently optic neuritis.

The process begins, as a rule, in the lower extremities but frequently involves the upper extremities. the diaphragm or may be bulbar in type.

The higher in the body that the process extends the poorer the prognosis.

The mental reaction is the typical Korsakow syndrome which was first described as the mental change accompanying polyneuritis in alcoholism.

Unfortunately the condition is frequently attributed to hysteria or to general weakness from lack of nourishment. The disease progresses to an almost fatal condition before the correct diagnosis is made.

I have seen several of the patients in the past five or six years. We have had three at the University Hospital this year. It might fix better in mind the symptoms to give a short case history.

Mrs. S., age 32, Para II, entered hospital April 16, 1932. One child eight years, one abortion seven years ago. Patient of neurotic type, faints easily and has always been nervous. Family history negative. P. C. she menstruated last November 28, 1931. In January she began to vomit, was treated for two weeks at home by a doctor and became no better. She was then hospitalized for twelve days and returned home feeling much improved. Although she had slight nausea and vomiting, her appetite was good and she gained weight. On April 6, she noticed some neurotic pain principally in her legs and she devoloped on the following day weakness of the exterior muscles of her legs and her nausea ceased. April 13 she was unable to urinate and was somewhat irrational.

April 16 there was difficulty in swallowing and legs were almost completely paralyzed.

Physical examination revealed a patient markedly obese with complete paralysis of legs and partial paralysis of the arms. Knee tendon and arm reflexes were absent. Partial paralysis of throat muscles. There was marked tenderness of the nerve trunks of legs and arms. Her vision was blurred and there was slight lateral nystagmus. Retinal examination showed flame hemorrhage in the right eye with bulging of the nerve head. Abdomen showed tumor mass of pregnancy of about five months. Pulse 134, blood pressure 116/74.

Her mental state was confused. She tried at times to cooperate but seemed worried. She could not remember recent events. She did not remember what month it was.

The laboratory data was essentially negative. Hb 72, RBC 3,820,000, WBC 10,100, normal differential. Urine was high in specific gravity with only a slight trace of albumin. Spinal puncture gave pressure 6cm and normal cell count. She died April 18, at 8 p. m.

Autopsy report with the exception of evidence of passive congestion of kidneys and spleen was negative. The histological study of nerves and cord has not been completed.

The etiology of this condition is unknown. Most certainly it cannot be grouped with yellow atrophy of the liver, eclampsia and pernicious vomiting. It presents a distinct clinical picture, both clinically and pathologically from the other complications which result from the toxic conditions of pregnancy.

The clinical picture is represented by a Para 1 or 2 giving a history of severe vomiting which was not relieved by any usual method of treatment but ceases apparently spontaneously shortly before the first symptoms of paralysis occur.

The patient is usually dehydrated and emaciated from vomiting. The blood pressure is normal or below and the temperature is normal. The pulse is always accelerated, generally over 120. The paralysis occurs first in the lower extremities and is accompanied by weakness, numbness and increasing muscle pain. The reflexes early are diminished and later absent.

Laboratory findings on urine, blood pressure, and spinal fluid are usually negative.

The pathological reports show no gross anatomical changes. Careful microscopic examination of the nervous system shows definite lesions. Nerve degeneration can be shown in all cases. Degenerative changes are usually found in the anterior horn of the spinal cord. They consist in loss of Nissl substance, swelling of the cells and occasionally cell necrosis. Petechial hemorrhages have been demonstrated in both the brain and cord.

The prognosis is dependent largely upon the stage of the disease in which the case is recognized.

Individuals with severe vomiting of pregnancy should be carefully watched for the occurrence of any neurological changes. As soon as the diagnosis can be established the uterus should be emptied. The symptoms are not relieved as a rule for several days or weeks and may be permanent. The length of time which they persist, or their permanency is dependent largely upon the stage of the disease in which the pregnancy is terminated.

Although this disease is relatively rare the seriousness of this condition should emphasize upon us the necessity of careful neurological examination of all women with hyperemesis gravidarum.

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DISCUSSION

M. E. GRIER, M. D., Omaha: I feel that a symposium of this type should receive the fullest attention. I believe that in the kidney of pregnancy we are dealing with a true nephritis, a recurrent nephritis with a superimposed eclampsia, or a true eclampsia. Blood examination at times will help us in differentiating one from the other since a true nephritis will show marked urea retention, while a large percentage of true eclampsias will show a normal blood urea. In spite of the low blood urea in eclampsia the non-protein nitrogen is frequently raised, the increase occurring in the undetermined portion of the non protein nitrogen.

In addition the differentiation may be aided by the type of onset. As Dr. Moon states, nephritis comes on gradually while eclampsia has a more abrupt onset and for this reason receives prompt attention. The nephritis developing more gradually is inclined to receive less active attention which is a grave error because it is in true nephritis that there occurs definite, permanent kidney damage.

In regard to the treatment, the control of the immediate distress of the patient varies between the administration of morphine, magnesium sulphate, and the different sedatives of the Barbital group. The use of glucose, however, is unvarying and should be given in sufficient dosage intravenously or subcutaneously to insure absorption.

RALPH LUIKART, M. D., (Omaha): Dr. Grier expressed my attitude in regard to the pleasure of having the opportunity to hear a symposium of this kind. Even though the essayists say there is nothing new, correlating the facts as they have brings new ideas to our minds which are of great help to the patient, particularly the points that stress the importance of prophylaxis. Inasmuch as the treatment of these patients has been intensive, we are impressed with the importance of early care, as suggested by Dr. Moon, because it is of as great importance as anything said.

In regard to the treatment mentioned by Dr. McGoogan I agree with him on his suggestion and the statistics quoted. There is nothing more impressive than Polack's report of the treatment of four hundred cases handled by him and the Gynecologist at the Brooklyn Lying In Hospital, the results were better in those treated conservatively than where radical methods were used. With four hundred cases being taken care of, of course, neither group received all the difficult cases.

With regard to vomiting being more common with the hydatidiform mole than in ordinary pregnancy, it is worth while to remember our Ashheim Zondek will show five times the positivity of an ordinary pregnancy. When in doubt this test should be made. In the last four years, I have had three cases of hydatidiform mole, two of which were referred as cases with pernicious vomiting. One was not recognized until the sixth month. She went through the troubles of the damned to no avail. This case has since died of chronic epithelioma.

We are handling vomiting in pregnancy better than we did twelve years ago thanks to Titus and others. We are pouring in glucose and large quantities of water, and definite improvement results, yet the case terminates fatally even though the uterus is emptied. Complications are arising which did not when the uterus was emptied earlier. Concomitant with or as a result of this modern treatment polyneuritis follows. There is little or nothing we have accomplished by emptying the uterus in cases where the polyneuritis of pregnancy is advanced. A point which may prove to be of value is that one of these cases developed all the symptoms, with extreme tenderness of the extremities, mental confusion and difficulty of vision. She lost fifty pounds. That case was referred to a neurologist who noted the similarity of symptoms to beri-beri. He suggested that we give her vitamin B, which we did and she obtained some very definite relief.

I leave the suggestion that the use of vitamins may be a possible aid in the treatment of these cases. We are carrying them along to a more favorable termination so far as the vomiting is concerned with present day treatment, but are giving nothing in the way of vitamins to those cases unable to take nutrition by mouth.

DISEASE OF THE THYROID GLAND*

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Omaha, Nebr.

PART II

Disturbances of Metabolism. Hyperthyroidism is always associated with an increase in the metabolic rate. If there is no rise in the metabolism, there is no hyperthyroidism. The degree of the hyperthyroidism is almost perfectly measured by the increase in the metabolic rate. I wish here to make an observation which seems to clear up a sometimes perplexing problem. Occasionally a patient may have all the symptoms of a fairly severe toxic goiter with tremor, exophthalmus, voracious appetite and other characteristic symptoms and when the basal metabolic rate is computed it may be only plus 20 or plus 30. Such a rate is surprising. It is a fact that some people normally have a basal metabolic rate of minus 20 or even as low as minus 30. To increase from a normal minus 30 to a plus 20 is a jump of 50 points, which is just as much of an increase as from a normal plus 10 to plus 60. This point ought to be taken into consideration when a basal metabolic rate is found to be lower than the symptoms seem to warrant.

The loss of weight is rapid because the high basal metabolic rate produces rapid tissue destruction. The weight may drop 10, 15 or 20 pounds but often the loss of one-third or even one-half of the body weight is observed.

Disturbances of the Endocrine System. I enter into a discussion of this phase of the subject without much assurance. When active study of the endocrines began, we were all enthusiastic in believing that many obscure problems would soon be made clear. That hope has not been realized.

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*Read before the Academy of Medicine of Long Beach, Calif., March 11, 1932.

It is easy to speculate but it gets one nowhere. Almost nothing of the inter-relationship of the several members of the endocrine system is really known; most is conjectural.

A few facts are well established. It has long been known that in almost any thyroid upset there is at the same time a hypertrophy of the thymus in about 15 per cent of the cases. Williamson and Pearce believe the thyroid and thymus form one apparatus. Be that as it may after a diseased thyroid has been removed the hypertrophied thymus seems to revert to its original status.

In the presence of hyperthyroidism the injection of adrenalin is found to produce glycosuria; after the pathological thyroid has been removed the injection of adrenalin will no longer induce glycosuria. This does not prove much, except that in health there seems to be a balance between the adrenals and the thyroid which is disturbed when the thyroid is diseased. In cases of diabetes with simultaneous toxic goiter insulin often fails to control the sugar; after thyroidectomy the insulin produces its usual effect. This fact would seem to show some definite relationship between the thyroid and the Islands of Langerhans. It is supposed that the injection of adrenalin or an excessive amount of thyroid secretion inhibits the function of the pancreas.

Disturbances of the Respiratory System. Difficulty in breathing is often observed due to obstruction from pressure on the trachea or to involvement of the recurrent laryngeal nerves. In association with the difficulty of breathing there is often a tracheal catarrh which causes the voice to be a little rough and husky and causes the patient to cough to clear the throat. The stenosis is due to more or less flattening or angulation of the trachea caused by the pressure of the enlarged thyroid from each side, producing the so-called scabbard trachea, or, when at different levels, an angulation of the trachea. A circular goiter is the most serious form of stenosis; the trachea may be completely surrounded. Nocturnal dyspnoea may occur from tracheal stenosis and death may result, especially if accompanied by edema of the glottis.

A true emphysema may develop as the result of struggles to force air through the stenosed trachea.

One or both laryngeal nerves may be paralyzed as the result of pressure or stretching. If only one nerve is involved, it produces coughing, hoarseness of the voice and tracheal catarrh. If both recurrent nerves are paralyzed, a serious condition is likely to ensue and sometimes tracheotomy becomes necessary to avert a fatal result.

Intrathoracic goiter may produce serious respiratory symptoms from pressure directly upon the lungs.

Disturbances of the Function of the Oesophagus. Difficulty and delay in swallowing may be produced from pressure upon the oesophagus. This is especially likely to occur when a large intrathoracic goiter is present.

Miscellaneous Disturbances. Sometimes there is noted in connection with an enlarged thyroid an involvement of the entire glandular system. This may include the cervical, axillary and inguinal glands, the intestinal follicles, the lingual papillae and the tonsils. At the same time there is likely to be a great increase in the number of the small lymphocytes in the blood. This is a true poly-glandular disease and it is doubtful whether the thyroid pathology is more than an incidence.

In hyperplasia of the thyroid the bones of the body often become more delicate than normal, the fingers tapering.

A slight secondary anaemia is often noted, which may be the result of the increase in metabolic rate. This anaemia is by no means constant and may not result even in very severe cases. In a large proportion of the cases the coagulation time of the blood is delayed. A relative lymphocytosis is present in about half the cases.

DIAGNOSIS

The diagnosis of toxic diffuse goiter is easy in most of the typcal cases. If the case is seen early some difficulty may be found. Attention to a few points will usually be the means of clearing up most cases:

1. Persistent rapid pulse, precordial discomfort, palpitation and skipping beats. It should be noted that having the patient walk about the room or up stairs does not accelerate the pulse as it does in true cardiac disease or in cardio-circulatory disturbances.

2. Changes in size, shape and consistency of the thyroid gland. Too much stress cannot be laid upon the value of cultivating a good technique in examination.

3. Eye signs: Exophthalmus, widening of the palpebral slits, infrequent winking, lagging of the upper lid, and smooth forehead when eyeballs are turned upward are to be especially noted and recorded.

4. A voracious appetite with loss of weight.

5. A very fine tremor of the fingers when they are extended and the arm is not resting on the table or lap.

6. A history of vomiting or diarrhoea.

7. A high or increased basal metabolic rate.

8. A relative increase of lymphocytes in the blood.

Type III. Non-Toxic Nodular Goiter. During the past two or three years there has arisen an entirely different conception of nodular goiter from that formerly held. In the past all nodular goiters meant adenomata of the thyroid. Now there is enough evidence to prove that a large proportion of nodular goiters are not due to adenomata but are involutional bodies resulting from the contraction of the excess of fibrous tissue which forms when hyperplasia occurs.

It was observed that in a goitrous district the goiters of young people were almost always of the soft diffuse type. Later in life many of these diffuse goiters became nodular. Many subjects of diffuse goiters go over and over the process of hypertrophy and hyperplasia, followed by recrudescence and rest periods. With each exacerbation of the gland activity there is also an increase in the quantity of intra-glandular connective tissue, and during the period of quiescence this newly formed connective tissue contracts. During the process of contraction more or less of the follicles are caught in the meshes of the contracting fibrous tissue and thus these involutional nodules are formed. With each recurrence of active hypertrophy and hyperplasia followed by remission more of these involutional bodies will be formed. The greater the number of attacks and recessions the greater will be the number of the involutional bodies. Therefore, in a goitrous district it is to be expected that the longer a person has had a goiter the more nodular it will be, and this in the main is found to be the case. There are some exceptions in which the diffuse goiter remains diffuse throughout life, and this is explained on the ground that such cases have had no recurrences of hypertrophy and hyperplasia after their first attack.

These involutional nodules are not true adenomata and should not be regarded as true neoplasms, but only pathological by-products, such as scar tissue anywhere is the result of a pathological accident. It has been estimated that 90 per cent of the nodular goiters are produced by these involutional bodies and only 10 per cent are the result of adenoma.

The older idea of adenoma of the thyroid is that it is developed from fetal rests between the follicles. This idea also has been pretty definitely exploded. Rienhoff searched long and faithfully to discover these rests and utterly failed to find them. He concludes that there is no evidence of the existence of interfollicular cell rests or clusters of undifferentiated epithelium.

Type IV. Toxic Nodular Goiter. There is no evidence at present available to suggest that the nodules, whether adenomata or involutional bodies, can function in such a manner as to affect the organism as a whole. Nor has there been discovered in cases of toxic nodular goiter any changes in the histology of these bodies different from that found in a non-toxic nodular goiter.

On the other hand in all toxic nodular goiters, the parenchyma of the thyroid outside the nodules presents identically the same pathological picture that is found in toxic diffuse goiter, or what we have been accustomed to call "Exophthalmic Goiter". Possibly, at least there is no proof to the contrary, the irritation produced on the glandular tissue by the presence of these nodular bodies may be a factor in the production of the hypertrophy and hyperplasia found in the toxic type.

There seems enough evidence to convince one that pathologically toxic diffuse goiter and toxic nodular goiter are identical. There are certain differences in their manifestations to make it entirely proper to keep them under different classifications:

1. Toxic nodular goiters develop slowly and inisidiously while the onset of toxic diffuse goiter is apt to be acute.

2. Toxic nodular goiters occur mostly in people of middle age and older, at a time when their hearts and arteries are less dependable than in the young among whom most of the toxic diffuse goiters are found.

3. It is probable that most cases of toxic nodular goiter have had a low grade of thyrotoxicosis for months and years before their symptoms became sufficiently severe to lead them to seek medical advice. Their resistance, therefore, becomes greatly weakened before they seek relief, while the acute cases of toxic diffuse goiter apply for medical help at once before their vitality has been greatly lowered.

4. It is, therefore, easy to understand why the mortality in toxic nodular goiter is greater than that in toxic diffuse goiter.

BORDERLINE HYPERTHYROIDISM

The types of goiter that we have been discussing present comparatively few difficulties in diagnosis. The man who assumes that recognition of all goiters is easy has not met or has failed to recognize a form of thyroid disfunction frequently referred to as "borderline hyperthyroidism" or "*Formes frustes*". Cases of this kind are often treated for months or years as neurotics or cardiacs without their physicians suspecting that the real trouble is located in the thyroid gland.

Hamberger and Lev, in discussing these cases, gave the following characteristics of all of them, and they will be found of diagnostic and clinical significance:

1. The patients, both men and women, were beyond the middle decade of life.

2. The usual obvious signs and symptoms of toxic goiter; namely, goiter, exophthalmus, nervousness, tachycardia and excitability are wanting.

3. Many, if not all, give evidence of apathy, weakness, loss of weight, pigmentation, early fatigue, and some slight staring expression of the eyes.

In addition the diagnosis rests on a persistent increase in the basal metabolic rate, improvement or relief of symptoms and decrease in the basal metabolic rate following iodine medication and thyroidectomy, and the histological appearance of the removed glands.

In this connection Lahey says that hyperthyroidism of the apathetic type is far less striking and much more dangerous than hyperthyroidism of the activating type. Freund and Cooksey emphasize the necessity of careful study of ailing elderly persons without definite signs of goiter for thyrotoxicosis.

Clute and Adams, discussing these so-called "borderline hyperthyroidisms", report 69 cases, in all of whom the first basal metabolic rate was plus 30 or less, and 20 per cent of them were below the normal limit of plus 15. They emphasize the fact that these cases are hard to prove to be the victims of thyrotoxicosis and state that many of them are treated for years and by many doctors for something else, and that they are bound to be invalids until their real condition is discovered and they are treated as true cases of hyperthyroidism. In 30 of Clute and Adams' 69 cases there was a goiter; in the other 39 there was no appreciable enlargement of the thyroid. Only rarely was there a bruit or thrill. In all of the 69 cases sub-total thyroidectomy was done and the result was most satisfactory in 58 and 11 were not improved. It would be interesting to know if the diagnosis of these 11 cases was faulty or if other conditions were present which prevented the expected relief.

I have quoted the observations of these several authorities in order to free myself of the suspicion of stressing unduly a condition which some of you may regard as not very important. It is impossible off hand to give the number of these cases met during the past twenty years, but there have been a large number of invalids of years' standing who had been treated for a large range of suspected ills when the trouble all the time was an obscure type of hyperthyroidism.

Attention was first directed to this often unrecognized condition in 1887 by Chrostek. He referred to cases of this kind as "symptom poor", a very graphic expression. In the early work on the thyroid it was natural that these atypical, obscure and masked forms should be unrecognized, but even now, after so much intense study has been given to the thyroid there are doubtless in the United States thousands of invalids going around from doctor to doctor with thyrotoxicosis, who could be cured by thyroidectomy, whose real trouble has not been suspected. This is not so much a reflection on the medical profession as an acknowledgement of the great difficulties these obscure and misleading symptoms present.

One case may be found with a rapid heart and fibrillation and lack any other of the usual symptoms of hyperthyroidism. Another may be apathetic with none of the alertness supposed to characterize toxic goiter. Another may be nervous, excitable and unreasonable and be likely to be classed as a neurotic. Still another may complain of tiring easily, with a slight tremor, headache and vertigo. Others may have a slight tendency towards nervousness and a moist skin.

With such a paucity of characteristic symptoms one would never suspect hyperthyroidism unless he happens to be "goiter minded" and begins to apply tests. When the attending physician reaches this state of mind the case is usually soon cleared up. The results of the tests are not as striking as in the more typical toxic goiters, but they are absolutely convincing if carefully conducted.

First a careful history with clinical observations will probably reveal many symptoms which point with more or less certainty towards a mal-functioning thyroid. A little widening of the palpebral fissure; a slight tardiness of the lid drop; in more than half the cases no enlargement of the thyroid, but a goiter will be made out in some of the cases; the skin may be found to flush easily and there may be a tendency to sweat unduly, especially the hands, feet and axillae; the appetite may be found unexpectedly good and there may at the same time be slight loss of weight; there may be a slight tremor and even a suggestion of a staring expression; the pulse, which may be somewhat above normal, is not much affected by exercise; the blood pressure may be normal or above but there is likely to be some increase in the pulse pressure; there may be found at times a more or less mental excitation and emotionalism which seems to be unmotivated. I can imagine you thinking that if all these conditions are present, wherein lies the difficulty of making a diagnosis? The answer is that if all the symptoms described were present there would be no especial difficulty, but as a rule only one or two or three of these symptoms are found in one individual. The symptoms are usually there but not enough of them to give the proper hunch.

There are three further tests which will usually clinch the diagnosis: First, the basal metabolic rate, though not usually as high as in the typical case, is habitually a little above normal. There are no minus readings if hyperthyroidism is really present. The first reading may be a plus 25 or a plus 30 or even a little higher. Several basal tests should be made and if all or most are a little above normal this fact speaks in favor of a toxic thyroid.

Second: As a therapeutic test the use of iodine or thyroid extract is valuable. If the case is one of hyperthyroidism improvement almost always follow its use within a few days. As Richter puts it: "The use of full doses of iodine as a therapeutic test of thyrotoxicosis ranks in value with the therapeutic test for syphilis in pre-Wassermann days."

Third: The Goetsch test has almost its sole use in these borderline cases. Six to ten minims of adrenalin hypodermically will usually so accentuate the symptoms by increase of nervousness, acceleration of the pulse, making an almost imperceptible tremor very pronounced, produce profuse perspiration and bring out excitation and emotionalism, so that a case whose symptoms are very vague may be made for an hour or two to present all the appearance of a typical case of thyrotoxicosis.

Almost all of these borderline cases are comparatively easy to recognize after one suspects that hyperthyroidism is present. The chief difficulty has been that the symptoms are so atypical that the thyroid is not considered. It is very important not to go to the opposite extreme and assume the thyroid is at fault when the entire train of symptoms is due to something else, because not all cases of obscure symptomology are due to hyperthyroidism.

For instance hypertension often produces a slight elevation of the basal metabolic rate which is persistent, and hypertension may produce neurotic symptoms such as pounding of the heart, tremor and a general sensation of nervousness. Heart lesions with accompanying shortness of breath, palpitation, nervousness and a sense of fatigue may lead one to suspect the thyroid. A careful auscultation of the heart will reveal the lesion, but it must also be remembered that the presence of a heart lesion does not prove there may not be a simultaneous toxic goiter. Another important point in differentiation is that exercise affects profoundly the organic heart case, while in thyrotoxicosis the heart is much the same resting as exercising.

Many other conditions cause a rise in metabolic rate; such as cardio-renal disease, leukemia and late pregnancy. The neurasthenic patient will frequently show an increased basal metabolic rate at the first reading or two which will be absent in subsequent tests. This accentuates the fact that repeated basal metabolic tests should always be made. It takes so little mental or physical disturbance to elevate the rate that this precaution is necessary to avoid error in conclusions.

And lastly, the person suffering from neurocirculatory asthenia presents a good many symptoms suggestive of a toxic thyroid, but there are some definite points of difference. These patients are pessimistic, low spirited, with a general mental depression which separates them sharply from the buoyant and hopeful mental attitude of the thyrotoxicosic patient. The neurasthenic fears to be alone, fears crowds, and has many needless and imaginary worries, while the thyroid patients views almost everything with a hopeful attitude. To be sure these borderline cases are sometimes apathetic but their apathy usually alternates with periods of exaltation and extreme complacency.

PATHOLOGY

Probably enough of the pathology of thyroid disease has already been indicated. Therefore, only a brief summary will be given. I wish again to express my indebtedness to Dr. W. F. Rienhoff, Jr., whose study of the thyroid has changed some previous conceptions of its pathology and has helped to elucidate many obscure points. Grossly, the thyroid gland is enlarged in every case of hyperplasia; this increase in size is sometimes so slight that pre-operative examination fails to reveal it, but after cutting down and exposure the hypertrophy is easily demonstrated.

In the hyperplastic gland there is little or no colloid. The hypertrophy then must be due to the development of many of the small follicles into large functionating follicles; to an increase in number and size and a heaping up of the epithelial cells within the follicles; to an increase of the connective tissue elements between the follicles; and to a great increase in the size and number of the blood vessels. The arterial walls become abnormally thick, while the veins are much larger in lumen but have thinner walls.

The external aspects of the follicles are not materially changed except from pressure one upon another, but they are filled to repletion by papillomatous infoldings of the epithelium lining them.

The colloid is greatly reduced in volume. One of the most striking characteristics of a microscopical section of a toxic thyroid is the change in the colloid. The amount of colloid is distinctly less than in a normal gland, and what there is of it is shreddy, granular, and less dense than normal, it is much less viscid, and takes the stain poorly or not at all.

In general there is a parallelism between the severity of the clinical picture and the histological changes in the thyroid, but it must be borne in mind that changes which would produce serious symptoms in one patient may only silghly influence another.

Hyperthyroidism is just as definitely associated with hypertrophy and hyperplasia of the thyroid gland as is the lactating breast with lactation hypertrophy. The iodine content of the gland is inversely proportional to the degree of hypertrophy and hyperplasia.

Instead of understanding hypertrophy to be the result of an increase in the number of the follicles it should be understood to mean full development of a lot of partially grown follicles.

The existence of hyperplasia does not necessarily mean that all parts of the thyroid are involved. It may be limited to one lobule or one lobe, or may involve several lobules scattered through one or both lobes, or it may be a diffuse enlargement of one lobe or of the entire gland.

Sometimes hypertrophy and hyperplasia are followed by hyper-involution so extreme that a minus metabolism occurs with true myxedema. In these cases the gland becomes smaller than usual, harder than normal because of a preponderance of fibrosis and a great decrease in the blood supply. Under such circumstances the regular administration of thyroid extract is of great value.

THE RELATION OF GOITER TO PREGNANCY

Much has been written about the relation of toxic goiter to pregnancy and it has even been supposed that goiter sometimes occurs as the result of pregnancy. This may have had its origin in part because in the later months of pregnancy there is often a considerable rise in the basal metabolic rate. This has been shown to be a physiological process and does not indicate any thyroid pathology.

Our interest in this subject is due to the question often discussed whether when pregnancy and hyperthyroidism are co-existent it should be viewed with apprehension and should modify the management of the case. These two condtions often co-exist. This is natural since the two conditions are most often present at the same period of life. Special care is necessary not to allow the rise in basal metabolism in late pregnancy to be interpreted as due to hyperthyroidism.

The conclusion is that when pregnancy and hyperthyroidism occur simultaneously they do not in any respect influence each other in a harmful way. In some cases, as pregnancy advances, the hyperthyroidism decreases. This is interpreted as being due to the thyroxin manufactured by the fetal thyroid, although I am not wholly convinced that this is the correct explanation.

This much has been established, that pregnancy adds to the burden of a thyrotoxic patient and should be avoided if possible, but that hyperthyroidism when properly treated will not prematurely terminate pregnancy as a rule. Thyroidectomy can be undertaken during pregnancy with safety to both mother and child and has been done many times with complete success and with as good permanent results as if pregnancy had not been present. The babies of thyrotoxic mothers are as healthy and as free of tendencies toward hyperthyroidism as the babies of healthy mothers.

(To be concluded in next number)

EFFICIENCY IN MEDICAL PRACTICE*

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Medical practice, for an efficient doctor, is an organization of parts. These parts, or factors essential to medical efficiency, are:

Wide knowledge of medicine.
Sound health.
Tact and good humor.
Interest in extra-professional affairs.

If doctors were robots**, their efficiency quotient would be the ratio of work accomplished to the power expended in accomplishing it. That ration could be computed fairly only, if all of the parts of the mechanical man were present, well oiled and easily functioning. Take away even one part, and the robot's efficiency would be lessened. Unless repaired at once, the crippled machine would soon thrash out other parts, and wear itself, with increasing rapidity, to a condition of total wreckage.

Inter-dependence—Very early in practice, a doctor comes to a point at which the sacrifice of at least one of the "parts" or efficiency factors, seems unavoidable; and only after he has let go of it does he come to appreciate its importance, to see the inter-dependence of all parts, one upon another. For consider:

Rest and recreation are usually the first things sacrificed when a doctor finds himself pressed for time.

What becomes of his tact when he is tired twenty-four hours of the day?

What becomes of his friends when his tact and good humor fail?

What happens to his social contacts when his friends find him irritable and unaccommodating?

What happens to his practice when he becomes unfriendly and disliked?

Art in Medicine—Efficiency is a specific for business, an attribute of the robot. Doctors do not like the word efficiency much better than they like to be compared with the robot. Medicine is not a business, nor an arena for the performances of mechanical gladiators. Medicine is an art; doctors are artists—and like all artists, they do their best work when swept to great heights of emotion, when inspired by the great need for their services, when and where that need occurs. This is true enough, but a doctor defeats his own purpose when he allows the idea of art in medicine to hypnotize him into the passive forming of habits that are better suited to the painter and sculptor than to the physician.

The Obligation to Be Efficient—A good general definition for medical efficiency, I believe, is, "The ratio of health and happiness produced to the effort expended in producing them."

The very fact that the doctor's business is to produce health and happiness places him under a strong obligation to be efficient. He has only one brain and only one body, and he has only twenty-four hours a day in which to use and refresh them. Further, the way things stand in the medical profession at the present time, he has a limited number of years in which to make use of his mind and body. He must make the most of his efforts, or fall far short of the end and aim of his profession. Moreover, it is quite possible that a higher degree of efficiency in medical practice would do much toward changing the conditions that have prompted this discussion.

Average Life in Practice Is Short—Those conditions are reflected in the fact that the average life in practice for a medical man is twenty years, and that the profile of the average medical career shows, just beyond the peak, a decline as certain and almost as steep as the ascent that leads up to it. It is a decline in health, wealth, energy and practice. Too many physicians are dying in the late forties and early fifties.

Comparing Professions—These facts are significant, because in other professions they do not hold true. In law and engineering, for example, men in their fifties are at their best. They seem to have much more to show for their effort and experience than the average doctor. Moreover, their "achievement expectancy" is many times greater. Either there is a great difference in the men or a great difference in their manner of meeting responsibilities. Perhaps you will say there is a great difference in the demands made by the medical profession. Medicine is a hard and jealous mistress. She brooks no rivals —not even the amenities of human consideration. No client calls his lawyer out of bed at midnight to draw up a contract, or sends a consulting engineer into a blinding snowstorm to inspect a prospective power site. No patient hesitates to ask these things, and more, of his doctor.

Conditions Cannot Be Changed—These statements are true, but the difficulties they imply for the doctor are, and always have been, a part of the conditions of medical practice; and the young man entering upon his profession, does so with the expectation of meeting and mastering them. Failure to master these conditions is usually due to the failure of first one and then several of those inter-dependent parts in the young doctor's organization of self and practice.

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*Chairman's address, Medical Section, delivered at annual meeting Nebraska State Medical Association, Lincoln, May 26, 1932.

**Robot—An automaton that performs all hard work; hence one who works mechanically and heartlessly. From a creation introduced by Karel Capek, Bohemian playwright, in his "Rossom's Universal Robots" (R. U. R.) in 1921. (From Funk & Wagnalls New Dictionary).

Bad Start and Its Reasons—Many a young man gets off to a bad start. Most young doctors, as soon as they enter practice, begin to be sensible of deficiencies in preparation. Almost as great a handicap is the impractical bias of hospital training. In the hospital, the interne has come to be familiar with severe illnesses, surgical cases, chronic diseases in their terminal stages. Outside, he encounters few such cases. He misses clinical procedure and laboratory aids to diagnostic sureness. He misses the stimulus of the hospital's constant, organized and dramatic fight upon the forces of disease and death. He finds himself occupied chiefly with unimportant symptoms, and knows that at least some of these symptoms are not so unimportant as they appear.

Critical Years—These first, uncertain years, are critical years for the young doctor. Many a promising young man fails at this time to take proper hold of his practice and himself, and falls into habits of indecision, slovenliness, reliance upon stock medicines—in other words, he marks himself for mediocrity if not for failure.

Getting on the Right Road—On the other hand, these first, critical years are years of opportunity in which the young doctor can, if he go about it in the right way, set himself definitely on the highroad to success. To do so, he must bear in mind that these years, too, are years of training; a part of his preparation. He must bear in mind that every case is a matter of clinical interest, and should contribute something to his experience and facility; that every patient is a subject for personal interest and should contribute something to his tact and skill in handling the personal and psychological problems that arise in medical practice.

Personal Success—The aims of his profession are unselfish—even altruistic. No man can be wholly successful who loses sight of this fact. Nevertheless, any man's professional achievement is closely bound up with his personal success, and a doctor's greatest personal success lies in favorable contact with his patients.

Proportion in Psychology—The doctor may be able to prescribe a very effective treatment for a given ailment, but without the confidence and co-operation of the patient, this ability is unavailing. Inability or unwillingness to see the prospective benefit of treatment is a symptom of illness. So, often, are weaknesses for cults, goose grease and X.E.R. This is where the art of medicine enters in. It is the art of taking a sick body and a consequently unsettled mind, and moulding them to the form of health and happiness. Training does not make an artist, any more than instruction in medicine makes a doctor. An artist knows enough of anatomy to paint a head one-seventh of the full length of his human figure. A doctor needs a similar knowledge of psychological proportions, in order to recognize situations in which a lack of finesse will stimulate a mulish reaction on the part of the patient.

"It is your health or your funeral. There is the treatment; take it or leave it!"

Perhaps a doctor could say that to a well man without doing any harm; but the patient is not a well man, or he would not be in the doctor's office.

The Patient is a Funny Duck—A medical artist knows that in the sensitive patient's mind, resentment of slights, real or fancied, is disproportionately great. Every patient is, or considers himself, an exception to all rules. And yet I believe certain rules might be formulated that would be effective in handling all patients—rules based upon what the patient, consciously or unconsciously, desires and expects.

I—A patient wants to feel that he is the only one being considered. He does not return to the office where he has been given to understand that he is only a detail in a full routine.

II—He wants the doctor to make the examination thorough. Nothing so convinces him of the doctor's personal interest in his case.

III—He wants the doctor to give him and his case a generous measure of consideration. Nothing so wins his confidence as personal, sympathetic interest; nothing so awakens suspicion of incompetence as the lack of it.

IV—He believes the pain or symptom which he presents in his first interview should be relieved by the first medication or treatment. It is upon the result of this treatment that his confidence and expectation of future benefits are founded.

V—He wants the treatment to be explained to him, whether it be dietetic, physical or drug; he *wants to understand clearly just what is going to be done and how it is to be accomplished. There are few patients in these days who care to be kept in the dark concerning their ailments and the treatment they are undergoing. Few will tolerate such a course. Neither do they care to be dazzled with quick diagnoses or befogged with obscure and high-sounding terms.*

VI—The patient expects the doctor to descend to his own level in phraseology. He does not look upon this as condescension as long as he is, himself, invited to stand upon the doctor's level in the understanding of his case.

Office Duties—It takes time to go deeply into these matters with every patient, and this time must not be taken at the expense of any essential part of the doctor's complete organization. When practice warrants it, a doctor is wise to leave all details of appointments, outer office contacts, collections and the like, to a dependable secretary. Such details have no right to encroach upon time that properly belongs to the patient—nor, being neglected, to cause small worries which, collectively, stand in the way of efficient medical thinking.

Rest and Recreation Imperative—Nothing at all has that right. Nevertheless, there are certain interlopers that lay strong, if spurious claims. Chief of these is fatigue. In no field is the "law of diminishing returns" more applicable than in medical practice. All work and no play makes pretty dull doctors, and dull doctors are going to be unsuccessful doctors—no two ways about it. When rest and recreation are threatened by growing demands upon time, some arbitrary provision must be made for getting away from the grind. Let a doctor set aside one day a week—besides Sunday—for rest and recreation. His patients soon learn that he is not available on that day, and, except in cases of serious emergency, they will not call upon him then. His manner of spending that day is important. If he be wise, he will occupy himself with anything other than the subject of medicine, that he may return to duty, refreshed by genuine rest.

Doctor's Health Affects Patient—The mental energy and physical power of the doctor should be great enough to enable him to dominate the patient. A worn-out, sickly doctor, by his appearance alone, raises the question in the patient's mind: "How is he going to help me, when he can't do anything for himself?" A doctor whose face radiates physical health, whose bearing and conversation convey the impression of an active, energetic mind, can restore some measure of confidence and happiness in the patient, even before treatment begins.

Reading and Study—One of the bogies of medical practice is the spectre of backward-slipping that always threatens the man who is tempted to neglect his medical reading. A little neglect carries so heavy—so unfair a penalty! There are such volumes of matter to be read. How can a man read it all and have any time left to put what he learns into practice? He can't. He would be foolish to try.

The only sensible as well as the only possible course is to read a well selected few articles each week, a well selected few books each year; read regularly, carefully and critically. Such regular reading will far outweigh the weeks of desultory post-graduate work indulged in by the average physician in his effort to regain lost ground.

To Sum Up—Efficiency in medical practice—in other words, the production of the greatest possible amount of health and happiness for the energy expended, rests upon a structure built up of Preparation, Opportunities for Growth, Rest and Recreation, Firmness and Tact, Social and Extra-professional Contacts, and Pleasant Family Life. In the efficient doctor's life there is never a complete sacrifice of any one of these parts. There are times when special adjustments are necessary, when one activity may be curtailed in favor of another. But let this be done with due thought, and the balance may still be maintained.

Perfect balance is as rare a thing as complete collapse; and a high degree of efficiency in medical practice is still an ideal. When that ideal is achieved, it will be in the same manner as that in which efficiency in any other field is achieved. The fact that medicine is an art need not prevent a doctor from studying the demands of his profession and meeting them with as little effort as possible. It need not prevent him from analyzing all of his frequently repeated acts, both mental and physical, into their component motions, and reducing those motions to the smallest possible number. Suggestive of efficiency in mass production, isn't it? Mass production of Health and Happiness—well, that's not a bad idea!

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AN INTROSPECTION OF THE PROFESSION*

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We, as members of the Nebraska State Medical Association are in attendance at our sixty-fourth annual meeting. We are receiving information, in these three days, that brings us abreast the times in the diagnosis and treatment of the many ills that man is heir to; we hear reports from our delegates to national organizations, from our committees, and from our councilors; we set up a financial budget, and we elect our officers for the ensuing year. In short we are performing the varied and necessary duties that are requisite for the successful maintenance of a great corporation, in which, each member is an equal shareholder.

The officers of all modern corporations submit to their stockholders each year, an inventory of the assets and liabilities of the organization, which are of vital interest to all concerned. I am unable to discover any record of any such analysis in our association, and am wondering if such a report or self-evaluation might not be of interest to our stockholders.

May I be so bold as to present to you, my colleagues and fellow stockholders, a report of the inventory of our organization as it exists today? Believe me, I bring this to you, not as a moralist or a reformer, not as a Puritan or a demagogue, and not with any "holier than thou" attitude, but simply as one of the stockholders who sincerely believes that a thoroughgoing self-inspection can be of distinct benefit to each and every one of us.

Let us first consider a few of our liabilities, which if met, and discharged, would leave our society in a far more healthy condition. One factor that is always with us, and that is constantly undermining our foundation of integrity is the doctor that is always able to find a pair of tonsils, an appendix, or a bunion, that needs removal, in every patient that presents himself for examination. In the same category is found the man who carries a patient along under treatment for months for a peptic ulcer, a diseased gallbladder, or a pulmonary tuberculosis that does not exist, except in the misinformed mind of the unfortunate patient. A similar type of doctor, all too frequently creates a halo about himself by expounding to the patient and his friends, about how "yours is the worst case of peritonitis I ever saw that got well," and other similar exaggerations.

The alarmist, the salesman type, who solemnly informs the lady with an ovarian cyst or a slightly painful appendix, that she must get to the hospital at once and have it out tonight or not later than tomorrow morning could be dispensed with, without appreciable loss to the organization.

A heavy liability, and one difficult to combat, is the malicious gossip who delights in broadcasting tales detrimental to the professional or moral character of his colleagues. To him it is unimportant whether such tales are true or false; he merely hopes that their telling, will, in some manner, be of benefit to him. We are all prone to error, have made and will make mistakes, from which we may profit by constructive criticism in the proper places, but in my humble opinion, no physician is being true to himself or to his profession, who discusses such matters with the laity who are in no position to intelligently comprehend them.

Antagonism toward consultation does not strengthen us. Meeting with our fellows is beneficial to the patient, to his family, and to the attending physician. Consultation with ethical men of integrity can never injure anyone, on the contrary, a doctor who shuns or fears consultation may be the object of honest doubt among his fellow practitioners.

Wholly out of step with our society is the man who advertises himself as a "specialist" and who neither limits himself to that particular type of endeavor, nor has he built himself any proper foundation for such a claim. He is sailing under false colors and is taking an unfair advantage of other members of the profession.

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We all are fully aware of the immense value of the more refined methods of examination, which should be employed whenever indicated, however, subjecting nearly all patients to cystoscopies, gallbladder drainages, gastric analyses, metabolic rates, and extensive roentgenological examinations, while good salesmanship is hardly in keeping with the duty of a physician to his patient.

We all have our limitations. which we ourselves know full well. We admire the man that takes cognizance of this fact, and at the proper time refers his patient to the physician capable of successfully caring for the condition presented by this particular patient. Conversely, we cannot give our approval to the doctor who selfishly will attempt to do any and every type of operation or treatment, to the detriment of the patient and of the medical profession as a whole.

To mention the subject of division of fees improperly, is done merely to condemn it. This subject is as old as the profession itself, but nevertheless a vital one. To resolve the choice of a surgeon into an auction, the patient going to the highest bidder, rather than to the man best trained and best qualified, is a stigma, both to the surgeon who does the bidding and to the medical man that seeks it. The duty to the uninformed patient is entirely submerged in the financial side of the transaction, and he is the one who suffers because of it.

Year by year the physician is more and more frequently called upon for his opinions in medicolegal matters. In this type of work we should be overly cautious in our statements and in our endeavor to be just and honest toward both litigants. Our duty is simply that of determining the physical condition of the patient, the amount of disability, if any, and so reporting to the attorneys. It is not within our province to decide upon the merits or demerits of the claims of either the plaintiff or the defendant.

It is in this field that we see the most flagrant prostitution of medical integrity, done for the purpose of obtaining undeserved judgments, in the courts, with the accompanying large contingent fee to the attorney and the doctors who have sacrificed their professional conscience on the altar of gain.

In studying reports and testimony given by capable, and even brilliant physicians, under these circumstances, one cannot but be amazed at the absurd, ludicrous, and impossible statements at times set forth by them. They know that these statements cannot be true and are not substantiated by the findings in the case. Such statements cannot honestly convince their own attorneys, the jury, the judge, and certainly not their medical colleagues. Is it any wonder that the testimony of the medical expert is looked upon with much doubt? I welcome the day when our courts adopt the suggestion that has been frequently offered, that of non-partisian board of three reputable physicians appointed by the court, and whose report on the physical condition of the patient is final, and forms the basis upon which is determined the disability of the patient, if such dissability exists.

I am of the opinion that a review, by the board of councilors of the State society, of the medical testimony given in cases that fall into the above classification would be highly beneficial. This should be a regular function of our councilors, which, if performed, would have a marked tendency to eliminate this unethical practice.

In judging a physician or surgeon it is well to note in what direction he looks for his reputation. Quoting DaCosta, "The dignified surgeon looks only to his own profession. The newspapers may make a man's name familiar to thousands, give him a large practice and help him to get rich, but they cannot make him a great surgeon. The Commonwealth of Science is and ever will be a Democracy. It selects its own leaders and does not consent to receive them. Distinction in surgery comes from a mightier ordination than that by newspaper press, that is, ordination by the medical profession itself. The profession knows its own great men and they are by no means the ones puffed by the newspapers."

Enough for our liabilities. If the recitation of them has bored you, I ask your indulgence, and merely remind you that the first step in elimination of any undesirable or detracting feature is the recognition of its existence.

One hundred and twenty-five years ago Baron Boyer, the celebrated French surgeon, wrote a treatise that was supposed to embody, and did embody, all that was known of surgery at that time; and in that treatise he makes the statement that any notable progress in the art and science of medicine is impossible. Boyer was indeed a great surgeon but this prediction marks him as a very poor phophet.

Few of us stop to consider the enormous strides made in medicine since this prediction of one hundred and twenty-five years ago. Unknown at that time were the sciences of histology, bacteriology, microscopic pathology, ophthalmology, neurology and dermatology; unknown was the microscope, hypodermic medication, auscultation, the laryngoscope and ophthalmoscope, the x-rays, radium, electrical aids, the clinical thermometer, local anaesthetics, inhalation anaesthetics, antitoxins and vaccines, intravenous medication, surgery of the brain, chest and abdomen, the catgut ligature, the wonderful coal tar products, insulin, and scores of other things that are today regarded as commonplace.

Do we realize the immense amount of good that is being accomplished in preventive medicine, especially among infants and school children? Are we aware of the extension of the span of human life, as is reflected by the facts that in 1930 there were in the United States 1,700,590 more persons over the age of sixty-five, than there were in 1920, and this in spite of a marked decrease in immigration?

Our hospitals, with their complete modern equipment, efficient dieticians, well-trained nurses, and ambitious internes, are assets that are indespensible to modern medicine. Nor should we forget the almost limitless benefits of the various modes of rapid transportation and communication that are daily utilized in the numerous phases of diagnosing and treating diseases.

Six of our outstanding leaders have recently celebrated their fiftieth year in the practice of medicine. They have been builders and leaders of our society since its youth and its present robust condition is due in no small measure to their invaluable counsel and guidance. All honor to these six great assets of our society, Doctor John E. Summers, Dr. F. A. Long, Dr. A. R. Mitchell, Dr. B. F. Bailey, Dr. Harry Hapeman, and Dr. J. P. Lord.

I am sure that all of us highly prize the friendships that we yearly renew at these annual gatherings, as well as the new ones that we establish.

Among the most treasured friendships, are those of our colleagues whom we meet almost daily in our hospital rounds. With them we discuss our problems, dream our dreams, receive, and perhaps throw out helpful hints, and frequently throw off our coats and go to work with them. Constructive criticism, not handed out with "kid gloves" frequently comes your way, and we are all better men because of these contacts. In my humble opinion, fortunate is the man who daily labors with such true friends, such generous and unselfish colleagues; he should constantly strive to keep himself worthy of the continued confidence and respect of such men.

We have just cause to be proud of our profession as a whole, of the great work it is doing to alleviate suffering and prolong life, and of the great men it has produced. Our assets far overbalance our liabilities, our corporation is in a most healthy condition; it will continue to declare its regular dividends, made up of the self-satisfaction of a great work well done, of life-long friendships created and continued, and of a comfortable earned increment to us all.

A MODERN VIEWPOINT OF TRAUMATIC EPILEPSY*

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The subject of Epilepsy has always been an interesting one. Keen, in one of his writings on Epilepsy, states that "Epilepsy is a horrible disease, such, that I confess, were I myself or one of my children afflicted with it, I should welcome death as a relief."

In literature, we find that 460 years before the birth of Christ, Hippocrates practised the operation of trephining, but from his time until the early part of the nineteenth century not much progress was made. Prehistoric trephining was a remedial measure according to Newberger and he is authority for the statement, that the Chinese Surgeon Hoatha, in the third century, performed the operation of trephining. Sir Victor Horsley, in 1887, in examining the skulls of the Brocas Museum, suggested that many of the trephine openings had been made for Jacksonian Epilepsy.

Dr. Benjamin W. Dudley was the first American Surgeon to give special attention to decompression for epilepsy, performing his first operation in 1828, and was the first to report a series of cases.

Since that time many theories have been advanced and many discarded for the treatment of epilepsy of all types. In late years there have been the theories of water balance or hydraulic mechanism by Fay, the theory of the ketogenic diet and even alcohol injection. It is upon this basis of the work done by these pioneers and through the experience gained by our present day neurologists during the World war, that some advancement has been made as to the etiology and treatment of traumatic epilepsy.

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It is upon theory evolved and proved by the observation of Dr. O. Foerster of Breslau, Dr. W. Penfield of Montreal and others, that I wish to speak. These men have proven to their satisfaction the modus operadi of epileptic attacks due to traumatism. The matter that I am here presenting has been obtained by a visit to Prof. Foerster's Clinic in Breslau, from article by him and also articles by W. Penfield and others and from personal corroboration in my own cases.

Two observations were made which are the basis for this discussion:

1. Foerster and his co-workers observed that in unilateral head injuries the lateral ventricles on the side of injury in the encephalographic examination revealed that most often the ventricles on this side appeared dilated. This appears as well in non-osseous injuries as it does where you have bone injury. However, it is more marked where there is bony defect. The wall of the ventricle on the side of the injury seems to be pulled out toward the site of injury. I will later show you several cases in my series that show this. This fact has been observed by a number of men. Furthermore, this pulling defect and dilation of the lateral ventricle shows its effect on the entire ventricular system. In cases where the injury is to the side of the head, the opposite ventricle may be pulled across the median line toward the injured side. Where the vertex of the head is injured, both lateral ventricles may be pulled upward.

During the war, Foerster had made the observation that in doing puncture to relieve pressure in cases of internal hydrocephalus following injury with bony defect, that the ventricle often was close to the surface on the affected side. This displacement of ventricles was called "ventricular wanderung." However, this term is not exactly appropriate in application, for as will be shown, this displacement is due in these cases to scar formation at site of injury within the brain tissue, and the gradual and constant contracture of this scar toward the side of injury.

2. The second observation made by Foerster was, that often at operation for traumatic epilepsy, a slight pull made with the tissue forceps on the dura in the region of its adherance to the cortex, acted as a stimulus producing an epileptic attack. In lifting depressed bone in old cases acted as a stimulus. In certain cases he circumscribed the adherant dura by incision, freezing the involved area from the normal, the traction on this separated area was enough to act as stimulus producing an epileptic attack. He cites cases where traction upon the adherant scalp to dura and superficial surface of brain, brought about a stimulus causing attack.

In experimental produced brain injuries in animals by Penfield, Del Rio-Hortega, and others, it was found that an injury to the dura and not the arachnoid did not produce adhesions. Only when the pia mater is injured and the cerebral tissue disturbed or exposed, that inflammatory changes producing connective tissues result, thus forming scar adhesions between. dura, arachnoid and pia mater, also between dura and overlying tissues.

If the wound should go deeper into the brain it results in hemorrhage—cerebral tissue destruction. Quickly at this time in the area, large leukocytes appear. Within and around the wound the astrocytes begin to swell and multiply, sending out many branched proliferations. Following this, there is a marked new formation of blood vessels in and around the injured area. These new formed capillaries that are soon reinforced by larger arteries are derived from the vessels of the surrounding cerebral parts and also from the extra cerebral structures forcing their way from without into the scar. After the local reaction has subsided, then the process of scar contracture begins.

The fibrous astrocytes with their perivascular insertion and the vascular tree, form the supporting framework of the brain. In contrast to other organs the brain does not contain many connective tissue septa. Occasionally, one may see a neuroglia fiber go through the cell body of the astrocyte from one vessel to another, thus connecting vessels. This "vaso astral" framework is primarily concerned in the process of scar contracture. This entire framework due to the contracture is pulled outward toward the site of scar. From the pull excited on the new formed vessels in this scar, it is reasonable to suspect that reflex stimulus is started through the vessels to which they are attached. Although it has not been proven, a new nerve network may even accompany the new formed vessels.

This contracture process explains why so often epileptic attacks do not occur until years afterward. Professor Foerster has further demonstrated that such a scar does not form when cerebral tissue is cleanly excised. Even if this excision hole fills with blood clots, no connective tissue will form. However, the opposite is true, that a fluid filled cyst forms. This contains no connective tissue or only a very minimum amount. The excavation is not surrounded by a gliosis of the white and very little of the gray matter. It is impossible to find astrocytes on the cyst wall, nor is there an increase in the blood vessels. As a result, no scar.

The absence of scar formation in contrast to other tissues probably is due to the presence of cerebro-spinal fluid which quickly fills every vacant space and to the rigid protection afforded by overlying structures. Foerster, Penfield and others have corroborated these conclusions in a large number of clinical cases that have come under treatment where histological study has been made of tissue removed.

This brings this paper to the point where it is proper to discuss diagnosis and treatment. Foerter and Penfield give as a definition for epilepsy, "A specific reaction in the part of the central nervous system due to noxious stimulus." In the past we have considered as a rule, Jacksonia epilepsy as due to trauma, usually by mechanical means, be it by blows or gunshot wounds, etc. Foerster reports several cases of traumatic epilepsy due to birth injury, occurring from 14 to 19 years after birth. If mechanical injuries such as blow, gunshot wounds or birth injuries, will cause epilepsy years later, due to scar pull, is it not reasonable to suppose that the same condition may result from the post-infective conditions, such as mastoditis, meningitis, and the like?

Therefore, in every case of epilepsy, encephalograms should be made, because often there is a lack of history pointing toward injury or infective processes.

Due to Foerster, Penfield and others, and the advancement of neurophysiology, it is now often possible to determine or localize by symptoms, the area involved. Foerster has further developed and reproduced in a large number of cases epileptic attacks by electrical stimulation. This should be done under local anaesthetic in every case, and after the focus has thus been demonstrated. free excision should be done as already has been pointed out in the foregoing discussion.

THE PRESENT STATUS OF BOTULISM IN FOOD POISONING*

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In the progressive trend of civilization throughout the ages a multiplicity of obstacles inimical to the well-being or even existence of mankind have had to be met and surmounted. Prominent among these has been the never-ending need and quest for food to sustain the body of man. During early eras the means of subsistence depended almost entirely upon the resources of the locality in which individuals lived. That is to say, the dietary in one region would doubtless be predominantly meat, while in another it might be largely fruit or possibly fish. Consequently it was only among nomadic peoples that anything resembling a balanced ration was likely or possible and even they, on occasion no doubt, went hungry. As is usual there came a time when the survivors after a faminine began to cast about for a means of preventing catastrophe when nature failed them in certain seasons. As a result of rather harrowing experiences it was brought home to them that the preservation of food in times of abundance was an unqualified necessity. By reason of the findings of our ancestors and more so because of the additional data that have been gathered by recent scientific workers on the subject, a progressively developed scientific method in the preservation of food has gradually taken form.

Fully cognizant of the degree of advancement of the science of food preservation at the present time we must focus our attention upon the fact that outbreaks of poisoning do occur from the ingestion of preserved food stuffs. In reviewing the earlier explanations of the causes of acute poisoning from decayed or decaying food we come upon the statement that the food contained ptomaines. This was the usual verdict in the past. In our day this theory of ptomaine poisoning has no supporters among bacteriologists, epidemiologists, or others who have investigated the problem scientifically.

It is now generally accepted that most of the acute infections that follow the ingestion of spoiled food result from two microorganisms of the paratyphoid group, namely the bacillus aertrycke and the bacillus enteritidis. Some of the paratyphoid group are capable of producing a toxin that is as virulent when taken into the body as the organisms which cause it. Obviously, then, food poisonings may be of two kinds, infections and intoxications. Of the various sources of intoxication from food poisoning, there is one in particular which we shall emphasize owing chiefly to its destructive character. This is botulism.

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Botulism is usually regarded as the result of eating food that contains botulinus toxin. It is premised that the food contained bacillus botulinus as a contaminant and that a toxin was formed in the food before it was consumed. There are three established varieties of this anerobic organism, designated as types A, B and C, each of which produces an individually characteristic toxin. Observers have pointed out that bacillus botulinus can and does produce toxin within the body. This was shown by the experiments of Coleman and Meyer.(1) They fed quantities of the toxin-free spores of clostridium botulinum to animals and succeeded in producing symptoms of botulism, which in some cases resulted fatally.

The clinical picture of botulinus intoxication has been set forth by Van Ermengem(2) as follows: "Secretory disorders of the gastro-intestinal tract; symmetrical motor paralysis, complete or partial, depending very likely on lesions of the medulla, especially of the nuclei of various cerebral nerves and of the anterior horns of the spinal cord. It is characterized:

1. By an arrest of secretion or by a hypersecretion of saliva and bucco-pharyngeal mucus.
2. By more or less complete external and internal ophthalmoplegia (ptosis, mydriasis, paralysis of accommodation, diplopia, internal strabismus):
3. By dysphagia, aphonia, obstinate constipation and retention of urine.
4. By a general weakening of all voluntary muscles.
5. By absence of fever, but with no disturbance either of general sensibilities or of the intelligence.
6. To this syndrome are added frequent respiratory and circulatory troubles, which can lead to a more or less rapid death through bulbar paralysis.
7. Finally, the characteristic manifestations do not appear earlier than twelve or twenty-four hours after the ingestion of the food and are often preceded by gastro-intestinal troubles that appear gradually and persist for weeks."

The importance of the ocular symptoms was emphasized by Lancaster(3) who said that "usually the eyes are the first organs to be affected, and in mild cases the paralysis may be limited to the eyes." It may be added that of the food poisons which are known to produce acute infections or acute intoxications the toxin of clostridium botulinum is the only one that causes ocular symptoms. Various observers have noted that in patients who survive, the ocular symptoms are among the last to clear up. From the paucity of reports by ophthalmologists upon the clinical aspect of these cases it is only reasonable to assume that in most instances the patients were attended by their family physicians. In fact most of the data pertinent to the ocular symptoms have been furnished by others than ophthalmologists.

Soon after the discovery of the bacillus botulinus, Marinesco(4) made histologic studies of animals that had been fatally poisoned with botulinus toxin. He concluded that botulism was a disease of the central nervous system wherein the chief lesions were situated in the ganglion cells of the motor nuclei of the cranial nerves. Essentially similar conclusions were announced by other European physicians. Van Ermengem's summary of the findings of these experimenters is briefly as follows: It produces a cloudy, fatty degeneration of endothelium; of the secretory cells of certain glands; of striated muscle fibers; of the anterior horn cells of the cord, pons and medulla; and of the motor ganglion cells in the midbrain. There is an increase of neuroglia and a degeneration of the Nissl bodies. Wilbur and Ophüls(5) were of the opinion that the symptoms of botulism depended upon vascular changes. After seeing seven cases of botulism, four of which were fatal, McCaskey(6) observed that "the clinical picture is certainly that of a peripheral lesion."

From the lack of a uniform opinion regarding the cause of the eye symptoms, one of us outlined a series of experiments on animals with a view to deciding whether or not lesions of the visual pathway result from the toxin of clostridium botulinum. Some of the details of these studies have been published elsewhere,(7) therefore they will be merely summarized here. As one of us had a particular interest in the toxicologic aspect of the toxin of clostridium botulinum a great deal of time was devoted to experiments with frog nerve-muscle preparations. These studies will also be referred to but briefly at this time. The toxin used in these experiments was supplied through the courtesy of Dr. K. F. Meyer, director of the George Williams Hooper Foundation for Medical Research, University of California, and Professor Robert Graham, Department of Animal Pathology, University of Illinois.

These studies showed that the toxin of clostridium botulinum is a protoplasmic poison as regards peripheral nerve and striated muscle tissues, being apparently more selective in its effect upon the former. The destructive properties of the toxin, however, were not limited to these two tissues. Exudative lesions were noted in the optic nerves, optic chiasm, optic tracts, midbrain and in all the tunics of the eyeball. These lesions consisted chiefly of lymphocytes and monocytes, some of which had differentiated into polyblasts while others had become transformed into plasma cells. The exudate occurred for the most part about the vessels, but in many instances there was a tendency to migration into the parenchyma. Where maximal infiltration was noted as many as fifteen rows of lymphoid cells were present around the vessels. On the basis of these findings we advanced the proposition that botulinus toxin is probably a general protoplasmic poison.

The Journal of the American Medical Association(8) states that in the United States and Canada, from 1899 to 1928, including one outbreak from England and one from Argentina, 156 outbreaks of botulism have been reported with a total of 529 cases. There are valid reasons for the assumption that these statistics are too conservative. In the first place we must recognize that botulism is reportable by legislative requirement in but sixteen states. Furthermore, it is not possible that all cases have been correctly diagnosed since the typical symptoms are not always clearly manifested. It is possible that mild cases of botulism recover without the true cause of the disease being even suspected. This is particularly the case where the food in question has not developed a toxin of great concentration or when only a small amount of the food has been ingested. An apparent lack of susceptibility to even this powerful agent has been pointed out by observers who have recorded different outbreaks,—that is, among those who have tasted the contaminated food, certain individuals will suffer but mildly if at all. This phenomenon was clearly demonstrated in our experiments with chickens. In three cocks which were treated with intramuscular injections of small doses of concentrated toxin, such symptoms of botulism as weakness of the legs, drooping of the wings and limber-neck were noted, but the cocks eventually recovered completely.

The most extensive outbreaks of botulism that we have experienced in this country have resulted from ripe olives that were packed in California. For a while at least, this was thought by many persons to be the only article of food preserved by a canning process that was subject to botulinus spoilage. Dickson(9) and other investigators soon proved, however, that canned string beans, corn, other vegetables and various fruits were also liable to develop this contamination. With one of her basic industries thus threatened, California created a "Botulism Commission" consisting of Drs. Geiger, Dickson and Meyer. It will ever redound to the credit of that great state (California), that this commission of scientific investigators was not hampered by any political red tape or interference.

The results of the concerted action of The National Canners Association, the Canners League of California and the California Olive Association working with the state board of health have been phenomenal. Meyer(10) has recently published this statement: "Food commercially preserved in the United States has not been connected with any of the recognized cases of botulism since 1925." Even with this scientific advance on the part of commercial canners, the public is not entirely protected, as outbreaks continue to occur. Except for two cases of this intoxication which were caused by shallots, packed in Italy, all other cases since 1925 have been due to home preserved foods.

Through the researches that have been made during recent years it is now known that the only dependable method of preserving food in cans is by complete sterilization. This is accomplished commercially through the medium of large retorts which are heated to a specified temperature and this process is controlled by a retort thermometer. According to Meyer(10), the formulae of Ball(11) take into account every possible factor, such as the initial temperature at the center of the can, the length and character of the exhaust, the temperature of the retort before it is filled with food to be sterilized, the accuracy of the retort thermometers, etc. To preserve its attractiveness, a food like asparagus which has rapid heat penetration, the cans are subjected to short cooks at high temperature. Artificial acidification has been added as a protective measure for certain foods which will not tolerate more than a short process at 100 degrees C. without destroying their taste or appearance. Dr. K. F. Meyer(10) is authority for the following statements:

"As yet unsolved remains the problem of canning hams either cured or spiced. The texture of these products is completely broken down by a process adequate for sterilization (several hours at 240 degrees F. for a medium sized ham). Until the variable influence of sodium chloride, sodium nitrate and nitrite as inhibitory factors on clostridium parabotulinum has been experimentally established, the meat-packing industry is forced to label ham products: 'Perishable, keep cool.' Other meat and chicken products are not affected by heat sterilization, and are therefore handled like vegetables and fruits."

For our experimental studies of the heat resistance of the toxin of clostridium botulinum we utilized the heating method of the average house wife instead of a pressure retort or autoclave. The toxin was placed in a covered porcelain dish and was heated to 100 degrees C.; this temperature was maintained for one hour. White mice which were injected with one-half c. c. of this mixture showed no effect in four days, whereas mice of the same size had been killed in from two to three days with .001 c. c. of the toxin before it was treated by heat. This test with living animals was considered as fair evidence of destruction of the toxin by heat. The heated toxin was then tested with frog nerve-muscle preparations by the technic usually employed in pharmacologic experiments. A 25 per cent solution of the heat treated toxin in normal salt solution was used and was checked against a control in normal salt solution. The results seem to warrant the conclusion implied, for the study showed that while the toxicity was greatly lowered, it did not seem to be entirely destroyed. There was a diminution of nerve response in two hours while the control was normal. Repetitions of this experiment gave almost identical results. If there were any break in our technic which might explain the presence of any toxic substance in these boiled solutions we have failed to detect it. We offer no explanation of this as we ourselves are not entirely satisfied with the result. We are continuing to study this problem with a view to reporting our final opinion at a later time.

In this connection among the suggestions that may be grouped under the term, "prophylactic hints," are the following: 1. People should be warned not to serve food from cans which have bulging ends. 2. Never to taste food that presents a peculiar odor or from which there is escape of gas when the can is opened. 3. To cook left-overs thoroughly before serving instead of utilizing them for salads in a raw state. 4. That cold-pack methods of preserving are altogether inadequate in preventing botulinus spoilage. 5. That foods which do not tolerate long processes of cooking without disintegration should be treated at higher temperatures for shorter intervals. 6. That no method of food canning is safe except by complete sterilization. One valid reason for this insistence is that for cases of botulism in which the diagnosis can be made from the clinical symptoms there are but few available therapeutic aids. Morphine is advocated for its property of lessening absorption. Gastric lavage and saline catharsis may be employed to hasten elimination before the toxin is completely absorbed. The possibility or even the prospect of a botulinus antitoxin is so remote as to exclude any thought of its administration. There is not sufficient clinical evidence regarding the value of a biological product for use in the treatment of botulinus poisoning to warrant its use in human cases. Experimental work is being done with an antitoxin for veterinary use, but the clinical data on this product are not sufficiently conclusive to justify its administration in the case of a human being.

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DISCUSSION

JOHN T. MYERS, M. D., (Omaha): Mr. Chairman and Members of the Nebraska Medical Association: At this season we are particularly interested in food poisoning. We become addicted to picnics, and are apt to prepare food in the morning and serve it later in the evening. Since botulism is not very common, we might ask ourselves what interest the general physician has in it. It is of interest to the general physician because it does occur every once in a while, and when it does, it crops out unexpectedly.

Let me allude to a small outbreak here in Nebraska, which occurred not so very long ago, to show it is worth while for the general practitioner to be thinking of these things. Some material was sent to the University of Nebraska laboratories for toxicological examination. An individual was being held for investigation, thinking of poisoning in a family with a death and several cases of illness. We examined the material for ordinary poisonous substances, and found nothing. Then we made a filtrate of the stomach contents and injected it into animals, which died from botulism. When the stomach filtrate was mixed with Type A antitoxin, the animals still died with botulism. When it was mixed with Type B, it was neutralized, and the animals were protected—a pretty good indication it was due to this condition we are discussing—botulism.

Botulism is also of interest to the ophthalmologists. When I found Dr. Swab was interested, I began to wonder why. It is, of course, because there are definite eye symptoms in all cases. Sometimes they are the first ones seen. The ptosis and loss of accommodation due to local paralysis are early symptoms of botulism, and sometimes the only symptoms.

One of the things I would like to emphasize, and which is perhaps the most important from a general point of view, is the method of preventing it. Once the individual has swallowed very much of this canned food, there is not much that can be done for him. One wants to know what to tell the clientele. If there is any suspicion attached to any canned food, it should be heated just prior to its use. It should not be allowed to stand around unless refrigerated. Refrigeration is an important factor in preventing food poisoning. Otherwise, you may get a new crop of toxins. This has been brought out in the paper.

I think it is interesting that two new ideas were suggested. We have always thought that heat completely destroyed the toxin of cl. botulinum. These papers suggest that there may be some residual injurious substances not thus destroyed. If the food were consumed in large quantities, there might be trouble there.

That the toxin is not limited in its action to the nervous system is of interest. The evidence that it may injure body tissues as well as nerves is new. This may lead to something in the future which may help us to combat it.

I was much interested in the paper.

D. T. QUIGLEY, M. D., (Omaha): The discussion so far seems to put emphasis on the fact that botulism is a thing that occurs in canned food. I think it would be a mistake if we were to pass this subject without calling attention to the fact "botulism" means "sausage." The early cases were practically all from sausage.

One of the things that might interest the ophthalmologist and a fact not very well known, is that this is perhaps the most toxic thing known; in fact, the statement is heard repeatedly that one teaspoonful would be sufficient to kill the whole population of the earth.

The thing which is of value particularly to the ophthalmologist is the fact botulin toxin can be absorbed from any mucous surface. Sometimes a child who may touch the tip of his tongue or the red part of his lip to these poisonous canned foods has gone through all the signs and symptoms of botulism poisoning.

Absorption is well proven in the case of Dr. Marie, of Paris—perhaps the worker who has done the most with botulism. Dr. Marie was working in his laboratory with a concentrated solution. Some of the material splashed into his eye. He knew his life would shortly end. He washed it out, but he knew it would not be of avail. He disposed of his affairs, and three or four days later, he died of botulism.

The Colorado Medical Journal two years ago had a complete article on Botulism in Colorado, giving a review of the numerous botulism outbreaks that had taken place in that State, including a description of the outbreak at Sterling, which was due to canned beans.

The thing I want to ask Dr. Swab is this: In this Sterling outbreak, the physician in charge of these cases believed that only one patient died out of five or six children who ate the canned beans was due to the fact the Doctor had procured an antitoxin from Denver. From the tenor of this article, I concluded it was a thing anybody might get, and that it worked very well. I was surprised to hear Dr. Swab say no antitoxin for botulism existed.

DR. SWAB, (closing): I am very grateful to Dr. Myers for his generous appreciation of our efforts in this paper. He always has something interesting and scientific to add to this sort of presentation.

In regard to recalling to my mind the fact that botulism was named for sausage, I am indebted to Dr. Quigley, because it is entirely correct. The earliest cases of food poisoning determined to be botulism occurred chiefly in preserved meats, and the commonest one was sausage. As our people buy meat at the butcher shop—meat which has, for the most part, been carefully inspected—we have very few, if any, outbreaks from preserved or cured meat.

My statement, which was a quotation from Karl Meyers, of the University of California, to the effect there is no known means of preserving ham in cans, should be taken as a serious admonition. When they are not able to preserve hams in experimental and research laboratories, we had better be careful about home-preserved hams.

In regard to the toxicity of the toxin of Bacillus botulinus, I believe the demonstration Dr. Gerald gave, showing that even 5 per cent of diluted toxin is fatal, is sufficient evidence we are familiar with the toxicologic severity of this poison.

I am somewhat familiar with the records of the Colorado outbreaks, because of the fact that on different occasions I have reviewed the literature thoroughly in working out certain phases of this subject. As I remeber, one of the chief outbreaks was the Sterling outbreak, which, as Dr. Quigley said, was brought about by eating canned beans. I am not in a position to say anything about the antitoxin being of beneficial effect in those cases. As I remember, the mortality of the outbreak was rather low.

Within the last three weeks, I have had two letters from Sharp & Dohme, who maintain probably the largest pharmacological experiment station in the United States, in which they said the only antitoxin on the market at the present time has been made for veterinary purposes, and has been used for experiments on animals in laboratories; but that no antitoxin is available for human beings.

ENDOCRINES MAKE JOB FOR PIANO MOVERS

"When a fellow suddenly finds his weight increasing from a modest 350 pounds to a decidedly immodest 640, the Senegambian in the fuel is almost certain to have a noticeably endocrine complexion.

"That is what happened to a man in Chicago recently and, because nobody seems to have seen a therapeutic light on the subject, he was gathered to his fathers; whereupon practical complications arose. A gigantic coffin, seven feet long and four feet wide, had to be especially constructed. The morticians, (the stylish monicker for undertakers these days), juggled it into the apartment somehow, but when it was occupied they had to tear out the frame of a window and part of the brickwork and call a crew of piano movers to remove it.

"When we know all there is to be known about the ductless glands, such embarrassing occurrences should cease."

SURGICAL PROCEDURES ON THE SYMPATHETIC NERVOUS SYSTEM IN THE TREATMENT OF PERIPHERAL VASCULAR DISEASES*

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The progress made in the surgical treatment of peripheral vascular diseases such as Raynaud's disease, scleroderma, thrombo-angiitis obliterans, certain types of arthritis and arterio-sclerosis, has awakened interest in all medical centers.

Prior to the last decade, little hope for relief of pain or avoidance of amputation could be offered to this unfortunate group of sufferers. But neurological surgery has made vast strides in its march of progress and a brief review of the various surgical procedures is presented in the hopes of stimulating further interest and investigation in this important field of medicine.

HISTORICAL REVIEW

Jaboulay, 1899, cut the nerves approaching an artery and Higier, 1901, recommended tearing the nerve plexus around the femoral artery in cases of intermittent claudication. Leriche, 1927, who is credited with the establishment of periarterial sympathectomy, resected the sheath of the brachial artery for causalgia following median nerve injuries. Later, Leriche reported a large series of cases which responded favorably to periarterial sympathectomy. He advocates periarterial stripping of the adventitia and nerves for all vaso-spastic disorders, such as Raynaud's disease, trophic ulcers, causalgia and the spasm of the collateral vessels in thrombo-angiitis obliterans. Leriche believes that there is an intramural ganglion in the arterial wall in spite of the work of Kramer and Todd, and Potts and and Kuntz who have demonstrated that the fact that the sympathetic nerve supply to the peripheral blood vessels corresponds to the segmental neuro-muscular innervation.

Hunter and Royal, 1924, noted the extremities of patients, undergoing ramisectomy for spastic paraplegia, were warm, dry and pink. Then Adson and Brown, 1924, reported the first cases of Raynaud's disease treated successfully by lumbar sympathetic ganglionectomy and ramisectomy. Their studies showed a permanent vasodilatation of the blood vessels when the sympathetic impulses were completely interrupted and the following years of observation have corroborated this contention.

Adson advocates the transabdominal approach for the removal of the lumbar sympathetic ganglia because there are, frequently, inconstant rami which would not be seen by the retroperitoneal route. Thorough interruption of all the vasoconstrictor fibers to the upper extremities was not achieved by the anterior approach and removal of the stellate ganglion met with failure until the posterior approach was devised by Henry and Adson.

In more recent years, alcoholic injection of the sympathetic nervous system has been utilized in patients who were unable to undergo the major operation of sympathetic ganglionectomy for peripheral vascular disorders. This method of injection is based on the favorable reports publishd by White, Stern, Flothow and Abbott.

VASOSPASTIC DISEASES

Raynaud's Disease: This condition is a most classic vasospastic disease and is characterized by bilateral symmetrical vasoconstriction of the hands and feet. Raynaud, 1888, observed that there was a form of gangrene of the extremities unattended by vascular occlusion and little has been added to his original description. This phenomenon is so variable in degree that many cases of mild vasoconstriction are confused with Raynaud's disease. These patients have cold, clammy hands and feet and complain of some blanching of one or more fingers, with moderate degree of pain, when exposed to the cold weather. Sympathectomy may be performed in these patients but it seems a very drastic procedure when relief may be obtained by external heat, warmer clothes and massage. A true Raynaud's disease is characterized by symmetrical color changes in the extremities varying from a deep rubor to a marked cyanosis. The blanching of the fingers or toes is induced by emotional disturbances or exposure to the cold and is associated with severe pain. Gangrene appears at the tips of the fingers or toes, with distortion of the finger nails. Later this gangrene may involve one or more digits necessitating amputation unless the vasoconstriction can be relieved.

Raynaud's disease is seen chiefly in women and it is a very small percentage of cases that occurs in men.

The surgical procedure is no more hazardous than the ordinary laparotomy and immediately after operation the extremities are warm, dry pink and free from pain. The trophic lesions soon heal and the nails resume their normal growth.

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*Read before annual meeting Nebraska State Medical Association, Lincoln, May 26, 1932.

Cervico-thoracic sympathectomy is followed by a Horner's syndrome which consists of narrowing of the pupil and palpebal fissure with an absence of perspiration over the face. This syndrome is not disagreeable when the operation is bilateral but if only one side is operated upon the effect is very noticeable. The vessels of the retina are dilated as are the capillaries of the nose which results in an increase of secretion, from the nasal mucosa. The skin is usually very dry following sympathetic ganglionectomy but this slight discomfort can be easily overcome by the application of cocoa butter or cold cream.

Causalgia: This is a painful sequel of injuries to the peripheral nerves, chiefly the median, ulnar and sciatic nerves, and is characterized by severe pain, glossy, red skin and limitation of joint motion. Sympathetic ganglionectomy or alcoholic injection of the sympathetic ganglia gives relief in a large number of cases, however, due regard must be given to each individual patient in reference to the psychic and compensation factors.

Scleroderma: This disease of the skin is characterized by pigmentation, thickening or atrophy and frequently is associated with sclerodactylia. The distribution is usually confined to the extremities, neck, face and occasionally the chest and trunk are involved.

A small group of patients suffering with scleroderma give a history of cold, clammy, cyanotic extremities prior to the changes in the skin. This type will respond to sympathetic ganglionectomy because the increased blood supply permits the extremities to become hard, dry and pink with a gradual loosening of the tight skin.

Arthritis: There is a very small group of young adults who have swollen, painful joints and a previous history of cold, clammy hands and feet. External heat or the intravenous administration of typhoid vaccine gives relief by temporarily increasing the blood supply to the affected joint, and sympathetic ganglionectomy will produce permanent alleviation of pain with diminution of swelling. However, it is of utmost importance to use extreme care in the selection of cases for operation because not all forms of arthritis will respond to this type of treatment.

OCCLUSIVE VASCULAR DISEASES

Thrombo-angiitis Obliterans: This condition is due to an occlusion of one or more of the arteries to an extremity and is characterized by diminished pulsations of the peripheral arteries, varying degrees of color change, pain and often extensive gangrene. Buerger's original description stated that this disease was seen only in Hebrews and that cigarette smoking was a definite contributing factor. However, subsequent observations have demonstrated that no race is immune and, although most patients are cigarette smokers, this condition is seen in non-smokers.

The course of this disease is rather slow and for some time may be manifested only by intermittent claudication or cramp-like pains in the calves of the legs when walking a short distance. Later coldness and discoloration of the hands or feet is noticed. The color changes from a deep rubor to cyanosis and the extremities blanch when they are elevated. Gangrene usually begins around the base of the nail and is rapidly progressive unless adequate collateral circulation can be obtained. The only satisfactory means of obtaining adequate collateral circulation is to relieve the superinduced spasm of the unoccluded vessels. This can be accomplished by severing the sympathetic fibers causing this vasoconstriction. These cases must be carefully selected so that there is a definite assurance of adequate circulation after sympathetic ganglionectomy.

Arterial Sclerosis: Painful vascular disorders of the extremities, which may or may not be associated with gangrene, are seen frequently in the later decades of life. Roentgenograms will usually demonstrate the pipelike characteristics of these sclerosed vessels and it is obvious that little can be hoped for in reference to dilatation. However, relief from pain can be achieved by alcoholic injection of the sympathetic ganglia and, as the risk is minimal in skilled hands, this procedure is preferable to the administration of large doses of narcotics.

SELECTION OF CASES

The success of sympathetic ganglionectomy for peripheral vascular diseases is entirely dependent on two factors, the careful selection of cases and the complete interruption of all vasoconstrictor fibers. It is futile to perform a sympathectomy unless there is definite assurance that interruption of the vasoconstrictor fibers will produce sufficient vasodilatation to insure adequate circulation to an extremity. There are, at present, four methods of temporarily paralyzing the sympathetic fibers and estimating the degree of vasodilatation and pain relief.

(1). The fever test was devised by Adson and Brown in 1925 and consists of the intravenous administration of typhoid vaccine and estimation of the surface temperature of the extremities in contrast to the degree of rise in the temperature of the mouth. This is an accurate method of determining the relative increase in the blood volume of an artery. If the rise in the surface temperature of an extremity is double or more than the increase in mouth temperature is indicative that sympathectomy will produce a similar increase of blood volume permanently. There are two objections to this test, the severe systemic reaction and the fact that no information is obtained relative to relief of pain.

(2). Spinal anesthesia will produce vasodilatation of the lower extremities but this method is limited because it gives no information as to pain relief because all types of sensation are absent.

(3). Direct injection of the nerve trunks of an extremity often is accompanied by technical difficulties and is incomplete because all the sympathetic fibers are not interrupted.

(4). Direct injection of the sympathetic ganglia was first advocated by White and, to date, this method seems most satisfactory because vasodilatation and pain relief are obtained in as limited an area as desired. This test consists of injecting 5 cc. of 1% procaine into the sympathetic ganglia supplying the affected area and then estimating the degree of rise in surface temperature with a dermatherm. This test should be performed in a cool room, about 60° C. because a hot room will produce some vasodilatation so that the results will be misleading. The extremities are exposed to the air for at least thirty minutes prior to the first temperature reading. The patient is then placed in a prone position and needles are inserted 2.5 cm. lateral to the spinous processes of the seventh cervical, first and second thoracic vertebrae until the needle strikes the transverse process of the vertebra and then inserted 2.5 cm. below the transversed process and 5 cc. of 1% novocain injected at each side. This technic will interrupt the sympathetic fibers to the upper extremities. To inject the sympathetic fibers to the lower extremities, needles are inserted opposite the twelfth dorsal, first, second, third and fourth lumbar verterbrae. After the injection, temperature readings of the extremities are taken every fifteen minutes for two hours. also notes are made in reference to pain relief.

Morton and Scott have established a minimum vasodilatation level at 31.5° and it is our opinion that there should be a rise of at least 5° C. or more, sympathetic ganglionectomy or alcoholic injection is indicated.

SURGICAL TREATMENT

Cervico-thoracic sympathetic ganglionectomy is performed by making a midline incision from the fifth cervical vertebra to the fourth dorsal vertebra. Then the tendinous attachments of the trapezius, rhomboid and posterior serratus muscles are divided and these muscles are retracted laterally. The splenius and erector spinae group are next exposed. A blunt dissection is made over the first thoracic rib and then 4 cm. of the rib and transverse process of the vertebra are resected subperiosteally. The second thoracic ganglion is identified after the lung and pleura are gently retracted laterally. The second thoracic ganglion is removed by severing all therami and after downward traction the stellate ganglion, with its rami, is removed.

Lumbar sympathetic ganglionectomy is performed by making a midline abdominal incision and packing the intestines away. The patient is placed in Trendelenberg position and an incision is made in the posterior peritoneal wall at the promontory of the sacrum and is carried up 10 cm. over the aorta. Then the aorta and vena cava are retracted mesially and the psoas muscle is retracted laterally and the sympathetic chain is resected from the fourth to second lumbar ganglia inclusive.

Alcoholic injection is carried on in the same manner as the novocain injection which is used as a diagnostic measure.

It is my custom to inject 5 cc. of 1% novocain and follow this with 5 cc. of 95% alcohol. Occasionally there are uncomfortable paresthesias following alcohol injection but these disagreeable sequelae do not last long and they are minimal in comparison to the previous pain from vasospasm.

SUMMARY

Peripheral vascular diseases are no longer hopeless for there are now methods of therapy which will afford relief at a minimal risk. However, diagnostic injection should precede any form of operative treatment as it eliminates all guesswork from surgical measures on the sympathetic nervous system.

DOWN WITH IT!

Street Orator—"We must get rid of radicalism, Socialism, Bolshevism, Communism, and Anarchism."

Voice From the Crowd — "And while we're about it, why not throw in rheumatism?"—The Christian Register.

ACCURACY OF BIOLOGIC TESTS FOR PREGNANCY[*]

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INTRODUCTION

The accuracy of the recently developed biologic tests for pregnancy will determine their survival or rejection by the physician. There are three such tests—the Aschheim-Zondek, the female sex hormone, and the Siddall—and all are performed with relative ease. All depend upon the effect of either anterior pituitary or female sex hormone, present in the blood or urine of pregnant women, on the generative organs of animals.

The Aschheim-Zondek test is performed by injecting subcutaneously into immature mice small quantities of the urine of women suspected of pregnancy. A sufficient quantity of anterior pituitary hormone in the urine of the pregnant woman will produce hemorrhagic follicles or atretic corpora lutea in the test animal.

The female sex hormone test depends upon the demonstration of a mouse unit of the hormone in 10 cc. of urine by the Allen-Doisy method. This consists in the injection subcutaneously of small doses of urine into castrated adult mice and examination of vaginal smears from the mice for the charactertistic changes indicating the production of estrus.

The Siddall test is properly called a "hormone test for pregnancy." It is not a specific test for pregnancy, but for substances probably increased in the blood during pregnancy. It is performed by injecting blood serum of the woman subcutaneously into mature castrated mice, examination of vaginal spreads from the mice to determine the phase of the estrual cycle, followed by autopsy of the animal and comparison of the weight of the uterus and tubes to the weight of the whole animal. A resulting ratio below 400 is regarded as a positive reaction, above 400 negative. A positive test is due, for the most part, to pituitary hormone causing enlargement of the ovaries; to a lesser extent it is due to femal sex hormone in the blood of the pregnant women causing enlargement of the uterus of the mouse.

PROBLEM AND METHODS

We have attempted to evaluate the accuracy of the Aschheim-Zondek test in 100 patients where the diagnosis of early pregnancy was in doubt. We have used sexually immature rats instead of mice as used by Aschheim-Zondek, according to recommendations by Evans and Simpson(1), because they are sturdier than mice and easier to raise. In one third of the cases we have performed an additional Friedman(2)(3) test. This test consists of the intravenous injection into rabbits of 5-12 cc. of urine from the pregnant woman. About 30 hours later we do a laparotomy on the rabbit under ether, inspect the ovaries, and preserve the life of the animal. Rabbits only ovulate about 18 hours after copulation, and anterior pituitary hormone in the urine of the pregnant woman causes the development of hemorrhagic follicles or atretic corpora lutea.

RESULTS

PREGNANT GROUP

	Total	Aschheim-Zondek		Friedman Test	
		Positive	Negative	Positive	Neg.
Ectopic Gestation	2		1		2
Pregnancy with Fibroids	1	1			
Pregnancy with Ovarian cyst	1	1			
Pregnancy 1-4 months	14	12	1	8	1
Post abortion	2		1		2
Early pregnancy with bleeding ..	10	9	1	2	
Early pregnancy in amenorrhoeic women	3	3			
Early pregnancy in unmarried women	9	9			
Normal women within 2 weeks of missed period	8	8		8	
Normal women within 3 weeks of missed period	9	9		6	
Early pregnancy with obesity	1	1			
	—	—	—	—	—
	60	53	4	25	5

NONPREGNANT GROUP

	Total	Aschheim-Zondek		Friedman Test	
		Positive	Negative	Positive	Neg.
Early menopause	2	1	1		
Amenorrhea (ovarian hypofunction) ..	5		3		3
Ovarian cyst associated with amenorrhoea	3	1	2		1
Uterine fibroids simulating pregnancy	2		2		
Salpingitis with symptoms suggesting ectopic	3		3		
Ovarian cyst, regular periods..	1		1		1
Lactation amenorrhoea	2		2		
Metrorrhagia	2		2		
Delayed period	11	1	10		4

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[*] From department of Pathology, Bacteriology and Preventive Medicine, The Creighton University School of Medicine, and St. Joseph's Hospital, Omaha, Nebraska.

		Positive	Negative	Positive	Neg.
Teratoma testis....	1	1			
Teratoma testis after operation	2		2		
Teratoma testis, recurrent	1	1		1	
Hydatid mole	4	4		2	
Chorionepithelioma	1	1			
	40	10	28	3	9

In the 60 pregnant women, the test was erroneous in two patients, one two months pregnant, and one in early pregnancy with bleeding. In two patients partially aborted the test was negative with necrotic placental tissue still in the uterus. In 40 non-pregnant women the test was positive in three instances—one woman going into menopause, one with a delayed period, and one with a recently removed ovarian malignancy associated with amenorrhoea. In all, there were four erroneous reports in 100 patients. The test was positive in hydatid mole, chorionepithelioma, and in malignant teratoma testis, both primary and recurrent.

COMPARISON WITH OTHER REPORTS

In the original report by Aschheim and Zondek(4) the test was correct in 77 of 78 pregnant women, an accuracy of 98 per cent. Louria and Rosenzweig(5) reported 98 per cent accuracy in 132 patients. Sage(6) obtained 98 per cent accuracy in 238 specimens. He reviewed the literature, finding 95-98 per cent accuracy in 3,159 cases, Evans and Simpson(1) tabulated the results of 3,000 examinations by foreign workers with 98 to 99 per cent accuracy. Recently Ehrhardt(7) reported 2,000 tests with 98 to 99 per cent accuracy. In 1931 Schneider(3), using the Friedman test, had 98 per cent accuracy in 100 patients, while Reinhart and Scott(8) used the test on 150 patients with about the same error.

ACCURACY OF OTHER TESTS

The female sex hormone and the Siddall tests have not been tried to the same extent as the Aschheim-Zondek. The former was tried by Mazer and Hoffman(9) on 150 women with 81 per cent accuracy.

The Siddall(10) test gave 19 errors in 142 cases, an accurancy of 87 per cent.

COMPARISON OF TESTS

In a comparative study of 314 patients Mazer and Hoffman(11) found the Aschheim-Zondek test correct in 81, the female sex hormone test in 86, and the Siddall test in 80 per cent of cases.

CONCLUSIONS

1. The Aschheim-Zondek, female sex hormone, and Siddall test for pregnancy give high degrees of accuracy.

2. The Aschheim-Zondek test, in our own limited experience and the larger series from the literature, can be expected to give 96 per cent accuracy.

3. The following conditions other than pregnancy can be expected to give positive Aschheim-Zondek reactions: hydatid mole, chorionepithelioma, teratoma testis, women postpartum less than one week.

4. The following conditions sometimes give positive Aschheim-Zondek reactions: early menopause, amenorrhoea due to ovarian hypofunction, ovarian cysts with amenorrhoea, acromegaly, females with genital carcinomata, and rarely in males with extragenital carcinoma.

5. The Aschheim-Zondek test varies in tubal pregnancy. A positive reaction seems to indicate persistence of fetal life, while negative tests are probably due to fetal death before the urine is collected.

6. In abortion positive Aschheim-Zondek reports have been recorded up to eight weeks after the abortion. Here, as in tubal pregnancy the test probably stays positive as long as living placental tissue stays in contact with maternal blood.

7. In some instances the Aschheim-Zondek becomes positive 3-5 days after the date of the expected menstruation. It is commonly positive two weeks after the missed period.

8. The Friedman test is simpler than the original Aschheim-Zondek test, requiring only one intravenous injection into a rabbit. A conclusion can be reached with this test after 30 hours, or even 24 if necessary. The animal need not be sacrificed, and it is our practice to do a laparotomy and preserve the life of the animal. With this test Reinhart and Scott(8) had a positive finding 21 days after the known date of coitus, and after the patient had missed a period in the interim.

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MYOCARDIAL VERSUS VALVULAR DEFECTS*

GEORGE W. COVEY, M. D.,
Lincoln, Nebr.

My paper will not deal with the actual etiology, diagnosis, prognosis or treatment of heart disease. It has been more and more evident to me that the coordination of symptomatology and physical findings of heart disease with an intimate knowledge of the pathologic changes in the heart is exceedingly difficult; that not infrequently the most serious heart disorders are marked by the greatest poverty of cardiac findings; that the heart with the greatest outlay of physical findings may be grossly underestimated in its functional ability; that the presence or absence of a murmur is still too often accepted as indicating the presence or absence of serious heart disease; finally that, as a rule, valvular lesions are of much less importance than myocardial lesions. It is to this last proposition that I want particularly to direct attention.

In order to get some approximately accurate data on the relative frequency and seriousness of valvular and myocardial lesions I briefly reviewed from the cross index only, four hundred twenty-five autopsy records; there are about three hundred more records in the museum that have not yet been cross indexed, so are not included. As I did not refer back to the original protocols the following figures can't be said to be absolutely accurate but are approximately so.

Among the four hundred twenty-five records two hundred seventy-five had cardiac lesions listed in anatomic findings. Of these one hundred twenty-five were valvular and one hundred fifty myocardial, including myocardial infarcts due to coronary disease. Of the one hundred twenty-five valvular lesions, mitral stenosis was listed in twenty cases, aortic stenosis in fourteen cases and aortic insufficiency in five cases, a total of thirty-nine.

From the index of probable causes of death, a total of ninety-seven were attributed directly to the cardiac condition. Of the ninety-seven, eighty were due to myocardial disease and seventeen to valvular disease. Of the seventeen deaths due to valvular disease, five were mitral stenosis and four aortic stenosis.

Only one common valvular heart lesion is of great importance from the point of view of heart efficiency, mitral stenosis. Two somewhat less common ones, aortic stenosis and aortic insufficiency are of almost equal importance. In the former the right heart sooner or later fails and in the latter, the left heart eventually fails. The valve lesion itself in these instances is the primary factor in the eventual failure even though that failure is myocardial.

When we look over either our clinical experience or our autopsy room experience it at once becomes evident that these valvular lesions, mitral stenosis, aortic stenosis or aortic insufficiency are few in comparison with the number of lethal heart disorders, especially if we rule out the minor grades of aortic valve deformity; stiffening of the attachments of the cusps or very slight unevenness of the edges attributable to sclerotic changes, or partial calcifications of the mitral ring due to the same cause. It is probable that these lesions produce but little embarrassment to the heart in most instances even though sufficiently marked that physical findings point to their presence.

Viewed from another angle the valvular lesions fade somewhat as cause of heart failure. It is difficult to conceive of endocarditis being present without concomitant lesions in other heart structures. This is particularly true in rheumatic heart infections. It seems that perhaps heart muscle has greater power of apparent return to normal than other heart structures and that with its great reserve it can bear considerable permanent damage without functional impediment, so far as we can determine clinically; yet how often do we hold in hand a heart whose muscle, perhaps greatly hypertrophied, has failed and yet we are unable to see nor feel any gross abnormality to explain its failure.

Among the lesions concomitant with endocarditis affections of the coronary arteries may be of great importance. We know that often the rheumatic child shows a rise in blood pressure which does not subside after recovery. If this be due to involvement of any part of the arterial system then the coronaries may also suffer their first insult at this time.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 26, 1932.

Even though the patient with mitral stenosis or with aortic valve disease usually lives until his myocardial failure comes, we are justified in feeling that here the valve lesions is the primary and important cause of death and that the actual integrity of the myocardium, balanced against the degree of valvular disease measures the span of life in the given patient.

If we may leave the important valvular lesions with this brief discussion and turn to the groups in which primary or secondary heart muscle disease causes disability or death we find, I believe, a far greater number, a greater diagnostic problem, a therapeutic problem of much more diversity and a no less serious prognostic outlook. In fact, the prognosis is often more hopeless than in the classical valvular lesions.

The term "myocarditis" is unfortunate as applied to myocardial disease. It is made to include a multitude of conditions many of which are very remotely or not at all inflammatory in nature. It seems that we might well improve our nomenclature of myocardial disturbances yet as long as we understand the accepted meaning and do not use it too loosely it perhaps serves our purpose.

We may classify the various lesions into acute and chronic or as to cause or as to the actual process occurring in the myocradium. Probably any comprehensive classification must combine these.

As to the pathologic process, it may be inflammatory in the true sense, or degenerative or that group of events slowly occurring in vascular disease which includes degeneration with subsequent replacement by scar, so that progressive fibrosis is the visible end result.

True inflammatory disease is probably frequent. It is observed at the autopsy table in the acute stage less frequently no doubt than in the healed stage. It must occur in nearly all rheumatic heart disease; it is often seen with acute pericarditis, in septicemias and doubtless secondary to many of the acute fevers in some instances. The findings vary from the usual lesion of rheumatic fever through a diffuse cellular infiltration of the myocardium to the formation of miliary or gross abcesses. Syphilitic heart in infants and children would fall in this group. How many of these recover we do not know. Those that cause death we see at autopsy. The pathologic findings left behind when they heal are probably patchy or more or less diffuse fibrosis which shows nothing to indicate its origin and is no doubt often attributed to some other than the true cause.

Toxic myocardial degeneration is best typified by that seen in diphtheria, pneumonia, typhoid fever and other infectious diseases. There may be an alcoholic degeneration. Hyperthyroidism produces a toxic myocardial degeneration. Chronic gallbladder disease is not infrequently accompanied by this type of heart disease. It is conceivable that a toxic degeneration of heart muscle may return to a normal state. If some or many muscle fibers are degenerated past a certain stage their recovery becomes impossible and complete dissolution will result, the lost parenchyma being replaced by scar. This will be distinguished with difficulty if at all from scarring that results from some of the acute infectious processes mentioned in the preceding paragraph.

A great number of myocarditis cases fall in the vascular group. In this group we must place the so-called hypertension heart, the coronary sclerosis heart, the syphilitic heart of the adult. Of these the syphilitic heart is relatively rare. I do not feel that we can separate the two other groups, namely, hypertensive heart disease and coronary sclerosis with any definite boundary line. At one extreme there are, doubtless, hearts which show a myocardial failure as a result of long continued hypertension and without any marked involvement of the coronary arteries. At the other extreme there are hearts which die of coronary artery disease with minimal arteriosclerosis elsewhere and never having shown a hypertension. In the large intermediate group, a great proportion will be found to have some grade of coronary sclerosis usually sufficient to be a factor in failure if not the factor.

This last statement is borne out by the microscopic study of these hearts. Coronary sclerosis does not always have the tragic picture which we have learned to recognize as coronary occlusion with cardiac infarction. In many instances the arterioles and very small radicles of the coronary are most affected and the infarctions resulting from their slow occlusions can well be compared with those seen in the arteriosclerotic kidney, being microscopic in size. Such an infarction is not accompanied by pain, shock, fall in blood pressure, etc., as the larger ones are, but just as surely followed by a small area of degeneration and replacement by connective tissue. When these have recurred a sufficient number of times the functional ability of the heart muscle begins to wane and we have either sudden or slowly progressive heart failure. I wish to reiterate that in my opinion but few cases merit the classification of hypertensive heart disease. If these are observed over a period of time and at autopsy, most of them will show evidence of coronary disease.

SUMMARY

1. The coordination of symptomatology and physical findings with cardiac pathology is often difficult.

2. Therefore, the estimation of the functional ability of a given heart, the plan of treatment and the prognosis are sometimes in error.

3. Valvular lesions per se are of much less serious import than myocardial lesions.

4. Myocardial lesions are more difficult to diagnose and evaluate than valvular lesions.

5. Chronic myocardial lesions due to divers causes may bear so much resemblance to each other in the chronic stages that they are difficult to trace to their true origin.

6. Heart lesions due to vascular disease, if we except syphilis, are difficult to divide sharply into so-called hypertensive heart disease and coronary disease.

THE DISEASED GALLBLADDER*

EARL G. JOHNSON, M. D.,
Grand Island, Nebraska.

The needed courage to report personal observations on this subject was furnished by the last few paragraphs of President E. H. Cary's recent address to the A. M. A. in session at New Orleans. They are here quoted:

> "Our traditions are not in danger but our interest in the problems of the day requires the direction of the combined wisdom of our leaders, whose immediate interest in the science of medicine separates them into scientific groups, and often keeps them out of the council of the organization.
>
> "Medicine needs its men, the lowest to the highest. Let no man hide back of his ego and critically deride the profession. Rather let him become an interested worker, and if he has ideas or talent let him assume leadership. He is always welcome.
>
> "With the unbounded ocean of truth yet to discover, why take our present status too seriously? The practice of medicine has always been an art. It has developed into a science: science is systematized knowledge. Knowledge is accumulating; its detail is sometimes overpowering; but clinical medicine, when most efficiently practiced, requires that something of the practitioner which is the highest of all arts.
>
> "For those in medicine who feel the urge, there is food for both mind and soul. Human need is the great incentive. Impelled as we are by high purposes, this heaven on earth for every sincere physician. There should be a benediction beyond for all who live within the code."

So, with no thought of speaking a final word, but bringing to your attention favorable results in a small series, it is hoped that the importance of earlier recognition of the diseased gallbladder may be augmented in each of us.

Several theories as to the function of the gallbladder have been advanced. Those which have most general acceptance are that it is—

1. Reservoir and concentrator of liver bile, one part of gallbladder bile equaling in solid contents at least ten parts of a liver bile, emptying its contents by contraction of its wall into the duodenum.

2. That it has some definite part in calcium and cholesterol metabolism.

More numerous are the theories as to the route by which infection travels to the gallbladder walls. By way of lymph channels from the region of the appendix, ileum and pelvic viscera; by way of the blood stream into the portal circulation there withdrawn by the liver lodging in the gallbladder walls through vascular or lymphatic channels and finally by chemical injury to gallbladder mucosa by pancreatic juice. Regardless of the exact route traveled by infection the gallbladder walls once infected, it becomes a very potent source of infection of contiguous viscera whose pathology cannot be remedied medically or surgically; and frequently the infected gallbladder walls harbor this infection until we see all too frequently chronic arthritis, myocardial degeneration, (regard the individual suffering from longstanding disease of the gallbladder as a heart case) and probably malignancy of its own walls or ducts.

Finally the infection of the gallbladder walls interferes with the concentration of bile, absorption of bile salts, cholesterol, etc. It ceases to function, becomes the tonsil of the abdomen from which infection spreads to various organs and tissue throughout the body. Also it should be constantly borne in mind that of all organs within the abdomen it is by far the most frequent site of focal infection secondary to some present or past infection elsewhere in the body. It is recalled by all the frequency of the patient unrelieved by tonsilectomy, appendectomy and extraction of all teeth. In the series from which these observations have been made the percentage of cases was outstanding in which various tissues had been removed in the effort to destroy the focus of infection. While the larger number of diseased gallbladders are logically found from the third decade on it must never be forgotten that many cases are being reported in the first and second decades. By far the larger per cent of these cases present themselves for relief after a clear cut history three to twenty and more years of more or less stormy periods of abdominal distress. This being true and when there is so much time, so many accurate tests to confirm and complete an almost absolute diagnosis of gallbladder disease, why should we see abdominal scars only six months to two years old while the gallbladder in a higher more protected level continues to elaborate its toxins and spread its infection. That too great stress is being again laid upon early recognition of appendicitis is impossible. It is equally impossible to lay too great stress upon always keeping in mind the most common of all sites of abdominal focal infection, the gallbladder.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 24-26, 1932.

In considering the generous allowance of time given us in which to make a diagnosis of gallbladder disease in the vast majority of cases there are few conditions in which there is less reason for not making a certain diagnosis. As in most all cases in which we are called a diagnosis can be made in at least 70% upon a carefully taken history of a patient suffering from gallbladder disease will present no exception. Physical examination and cholocystography complete the hunt for evidence upon which a definite diagnosis can be based. A complete reliance upon the Graham-Cole test intravenously is often a costly mistake in spite of its 80% efficiency.

Treatment is of one kind only and in almost all cases immediate i. e. cholocystectomy complete where possible and partial where gangrenous. By partial cholocystectomy is meant a technique which trims away the gangrenous edges down to its liver attachment from the fundus to the cystic duct, removing stones, debris and bile by aspiration, locking stitching the remnents, wiping the remaining mucosa with tincture of iodine, two drains down to cystic duct using omentum to wall off from rest of abdominal cavity and closure.

It is my conviction that wherever possible adequate preoperative treatment and preparation is our staunchest ally. After an adequate cathartic on the day preceding operation the patient is advised to eat one-half pound of candy. ice cream, or is given glucose (in emergency) intravenously or subcutaneously; and two drachms of ca lactates or one quart of milk. At 7:00 a. m. he receives 1 capsule of sodium amytal, at 7:45 morphine sulphate grs ¼ and scopolamine grs 1/200 and at 8:25 a second capsule of sodium amytal. The usual preparation of the operative field is made without much notice being taken by the patient. One or two anaesthesias, either local 1% novocain or light Ethelyne or nitrous oxide inhalations. Adequate exposure is accomplished and the gallbladder brought into view. The following, known to all marks the guilty gallbladder: white patches or scars, thickened walls, stones, pericholocytic adhesions, sentinal gland, hepatitis and induration of head of pancreas. One or more of these findings make the criminal look of the gallbladder complete. The relation of the ducts cystic hepatic, and common, as well as the position of the cystic artery can be made in most cases without desection. A Cameron light is of value here at times. The cystic artery and duct are ligated en-masse if possible, the gallbladder stripped from its bed. A short time for hot pack to denuded surface of the liver, and close observation of stump of duct and artery, using a second ligature where thought needed completes the operation as far as the gallbladder is concerned. Closure by layer in the usual manner without stitching the gallbladder fossa or placing a drain.

Post-operative treatment consists of giving 1,000 c.c. of 5% glucose in physiological normal salt solution subcutaneously. This is usually not noted by the patient and repeated if necessary. The Michel clips removed the fourth day, tension sutures the 8th day and home on 9th or 10th. In this series of 113 the mortality was two, ages ranging from 11 to 82, conditions from the gangrenous ruptured gallbladder to the usual chronic.

SUMMARY

Gallbladder disease is not uncommon in any decade of life.

A diseased gallbladder can well be regarded as the most dangerous and common focus of infection in the abdomen, the more dangerous because sometimes "too silent."

Closure without drainage or suture of the gallbladder fossa is most desirable.

Unsatisfactory end results are due in most cases to other pathology outside the gallbladder or cystic duct which would not have occurred, and often which can not be corrected, had the gallbladder been removed earlier and finally many incomplete cures can be charged to too frequent use of some form of drainage. Remember that G. B. disease does not always occur in the male or female, who is fair, fat and forty.

Let us quickly and gently substitute a neglible pathology for a serious one.

DRUG IDIOSYNCRASY DUE TO THE PHENYL GROUP

(Second Report)

EDWARD S. MALONEY, A. B., M. D.,*
Omaha, Nebraska.

In a previous publication(1) a case of chronic urticaria due to sensitiveness to the phenyl group was reported. It was shown that the drugs at fault each contained a common radicle, the phenyl (C_6H_5) group. Since that time the writer has observed two cases of the same nature, in both of which the symptoms were due to the oral ingestion of drugs containing a phenyl group.

The writer wishes to express his appreciation to Dr. H. F. Gerald, Professor of Pharmacology at the Creighton University School of Medicine for his assistance in these cases.

CASE REPORTS

Case I. Mrs. F. M., housewife, aged 36 years, first seen on April 27, 1932, with the following complaint:

a. Canker sores in the mouth.
b. Swelling of the face.
c. Skin rash on neck and arms.

Present illness: For the past 4 years, the patient has been troubled with canker sores in her mouth. These occurred at irregular intervals and rendered swallowing very difficult and painful. The illness varied in duration from 4 to 7 days. The swelling of her face was confined chiefly to her lips and eyelids; and occurred simultaneously with the appearance of the canker sores, subsiding with their disappearance. At times, she would also have a dry scaly erythematous rash on her neck and throat and at the bend of the elbows. No other areas were involved. These lesions itched severely; scratching would raise welts.

Her personal history for other allergies was negative. Patient had some polyps removed several years ago. At the present time, she does not have any nasal symptoms.

The dermatitis was thought to be due to allergy, because of its locations and the failure of other therapeutic measures, although a blood eosinophilia was not present). She did, however, show other manifestations of allergy; (a) canker sores (as advanced by Rowe); (b) swelling of the face. (c) Her daughter has bronchial asthma.

The physical examination was negative ercept for the lesions described. There was an absence of blood eosinophilia. Skin tests with the common allergens revealed slight reactions to milk, veal and tomatoes. Elimination of these foods together with those in the same group made no improvement in her condition.

The possibility of drug allergy was then investigated, and it was found that a laxative containing a derivative of phenolphthalein was being taken frequently. Patch tests with this drug gave a negative reaction at the end of 72 hours. Boerner's test for aspirin and quinine was also negative. Despite the fact of these negative reactions, this drug was avoided, and in five days the skin rash, canker sores and swelling of the face had completely disappeared. The foods giving positive dermal reactions were now deliberately eaten, with no return of symptoms. The patient has remained well since, except on one occasion when she attempted to again use this laxative. The canker sores and swelling of the face appeared two days after its ingestion.

Case II. Mrs. L. N., housewife, aged 42 years, first seen on January 25, 1932, complaining of a skin rash on her arms.

Present complaints: For the past year has had a skin rash on both arms, extending from the elbow to the wrists. The lesion varies in intensity, and at times itches severely enough to cause insomnia. When scratched, the lesions puff up. The patient also suffers from migraine. The family history is negative for allergy.

The patient states that the rash first appeared while in the hospital for a pelvic operation. She believed that it occurred after the ingestion of some medicine for her bowels. Inquiry disclosed that salol (phenyl salicylate) was taken. In addition, luminal (phenobarbital) was taken for sleep.

Skin tests for all the common allergens were negative, except for a two plus reaction to milk, intradermally. The dietary restriction of milk slightly benefited the itching, but did not cause the rash to disappear. Salol and luminal were avoided, and drugs which do not contain a phenyl group, as amytal, etc., were substituted. In ten days the skin lesions had disappeared entirely. Since this time, they have not returned.

COMMENT

1. Two cases of iodosyncrasy to the phenyl group are reported.

2. It is believed that many such cases exist, and that this possibility should be watched for when the usual allergic measures fail to afford relief.

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MASSIVE DOSES OF ANTITETANIC SERUM: CASE REPORT

LUCIEN STARK, M. D.,
Norfolk, Nebraska

P. H., of Wisner, Nebraska, was brought to the Lutheran hospital at Norfolk, Nebraska, by his physician on the morning of April 6th, 1932, and the following history was obtained.

On March 24th, his hand was caught in a corn sheller resulting in a ragged wound in the left wrist. He was taken to the doctor's office in Wisner where the wound was cleaned and dressed. He refused to take a prophylactic dose of antitetanic serum. The wound was cleaned and dressed at regular intervals but upon April 2nd his jaws began to feel slightly stiff. He said nothing about it until the following day. At that time his temperature was slightly above 99 and the doctor insisted upon giving him some antitetanic serum which was again refused. On April 4 his jaws being more rigid, and as he showed other muscular rigidities, the doctor administered twenty thousand units of serum intramuscularly. April 5 he again received twenty thousand units intramuscularly but refused to go to the hospital until very late that night. He arrived at the hospital about five a. m. on the 6th, showing all the signs of a very severe tetanus.

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His jaws were almost completely locked, showing less than one-eighth of an inch of motion in any direction. His entire muscular system was in a state of tonic contraction and occasionally he would have convulsive seizures which brought every muscle into the most rigid contraction. These seizures kept him wet with perspiration continuously. He was unable to urinate voluntarily. I gave him one-half grain of morphine in two cc. of twenty-five per cent magnesium sulphate in order to get him sufficiently relaxed so that we might do a spinal puncture. Upon getting a needle into the spine the fluid came out under considerable pressure and we removed approximately sixty cc. of fluid and immediately injected into the spinal canal twenty thousand units of antitetanic serum. Immediately following I gave ten thousand units of serum intravenously. That evening I gave twenty thousand more intravenously and ten thousand intramuscularly. During the day two doses of one-fourth each of morphine in two cc. of twenty-five per cent magnesium sulphate were given to control the terrific convulsive seizures which came on periodically. That night we also used sixty grains of chloral hydrate in four ounces of twenty per cent glucose solution in the rectum which held him fairly well during the night. The next morning, under local anaesthesia, we did another spinal puncture removing forty cc of fluid and injecting twenty thousand units of antitetanic serum into the canal. At this time we thought we could detect a diminution in the number and severity of his paroxysms, so we established our routine for the day which consisted of giving him one-fourth grain of morphine in three cc of magnesium sulphate in the morning, and continued the injections of three cc. of magnesium sulphate at three hour intervals throughout the twenty-four hours. This program was carried out from this time until the end of his illness.

That night he again received twenty thousand units intravenously. It was this night that he had his highest temperature of 101.6, but his jaws were beginning to relax and his convulsions were less frequent. The following day we did another puncture removing fifty cc of spinal fluid and injecting twenty thousand units of serum into the spinal canal. At night he again took twenty thousand intravenously. As his improvement showed plainly at this time, we gave him twenty thousand the next morning intravenously and twenty thousand intravenously at night. The next morning I was not quite so well satisfied so under a chloroform anaesthetic I did a cisternal puncture removing forty cc of fluid and injected twenty thousand units directly into the cistern. That night he again rceived twenty thousand units intravenously. The next morning he seemed improved but we again did a spinal puncture removing between thirty and forty cc of fluid and injecting twenty thousand units of serum into the spinal canal and giving him twenty thousand intravenously that night.

The next morning the improvement was so marked that we gave twenty thousand intravenously and repeated the dose at night. This was the last serum he received, but we continued the intramuscular injections of three cc. of twenty-five per cent magnesium sulphate every three hours until April 14th when we cut it down to two injections a day. From this time on there was nothing notable in his recovery, and two weeks from the day of his entrance into the hospital he returned home.

The treatment of the wound during the time that he was in the hospital consisted of cleansing with hydrogen peroxide twice a day and keeping a wet dressing of 1-2000 potassium permanganate on the wound at all times. Our only reason for this dressing was the fact that the tetanus bacillus does not do well in the presence of oxygen and so we used all the oxidizing antiseptic possible for our dressing.

During the summer this man has had periodical attacks of hives which are undoubtedly due to the enormous amount of serum which was used upon him while he was acutely ill. This man had 190,000 units intravenously; 80,000 intraspinally; 20,000 in the cistern and 50,000 intramuscularly, all of which was taken within a period of less than two weeks.

While the amount is enormous I believe that the result fully compensated. It also goes to show that whenever an injury which breaks the skin takes place on a farm the use of antitetanic serum should be compulsory. We should not permit them to talk us out of it because the risk to life is too great and as antitetanic serum is quite expensive the economic loss aside from the loss of time is well worthy of consideration.

A COUNTRY DOCTOR OF YESTERYEAR

The other day I was thinking of the past, and one of the early pioneers in the settlement of Dawson county that most of us were well acquainted with, came into my mind, Dr. W. W. (Smokey) Bancroft. He was born in Dover, Del., Nov. 11, 1850, and passed away at his home in this city on August 16, 1926, at the age of 75 years, 9 months and 5 days. He located in old Plum Creek (now Lexington) on April 5, 1873, and resided here continuously up to the time of his death.

Dr. Bancroft ushered the writer into this world, as he did many of the folks who will read this, and took care of us when we were ill or suffered an accident, remuneration or pay never being considered in any case, and a great number forgot their obligation when they were restored to health. In the early days the territory covered by him, with horses, extended as far west as North Platte; east as far as Kearney; south to the Republican valley and north to the Loup river. He was a country doctor in every sense of the word and a very successful practitioner as far as administering to the sick, but the financial end of his business was neglected and he never received his just dues.

He is gone and others have taken his place, some, perhaps, with as much medical skill as the old doctor but they are not the same. "Smokey" had a way of his own, he knew the country, he knew the people, and medical skill was only about half of it. He was unselfish and humanly great in his profession and had no room in his mind for self-righteousness. He lived for others. And the men who do that, whether they be doctors, lawyers, butchers, bakers or candlestick makers, are the men whose places on this earth can never be wholly filled.—Lexington (Nebr.) Pioneer.

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OCTOBER

Ay, thou art welcome, Heaven's delicious
breath,
When woods begin to wear the crimson leaf
And suns grow meek, and the meek suns
grow brief,
And the year smiles as it draws near its death.

Wind of the sunny South, oh! still delay
In the gay woods and in the golden air,
Like to a good old age released from care,
Journeying in long serenity away.

In such a bright, late quiet, would that I
Might wear out life like thee, 'mid bowers and
brooks,
And, dearer yet, the sunshine of kind looks,
And music of kind voices ever nigh,

And, when my last sand twinkled in the glass,
Pass silently from men as thou dost pass.

—William Cullen Bryant.

GROUP INSURANCE CANCELLED AND DISCONTINUED

A letter from Secretary Adams of the Nebraska State Medical Association states that "we have just been notified by the United States Fidelity and Guaranty Company that on October 1st, 1932, they will cancel the group policy under which they have insured our members against malpractice suits. They have been threatening this for the last two years and your Insurance Committee with Dr. Selby as chairman has done everything possible in his power to prevent it. However, due to the fact that the Company has lost money ever since it issued this policy they have decided to discontinue it. This will mean that every doctor will have to look to his liability insurance as an individual and deal with the Company from that point of view.

"Any member of the Association who is insured under our group policy and his policy extends beyond October 31st, 1932, will have the remainder of his premiums returned to him."

Thus ends a system of insurance fostered by the State Association and for the life of which the insurance committee struggled bravely for a number of years.

There have always been some doubts of the wisdom of the plan and the members of the profession as individuals did not in sufficient numbers take to it; hence its failure.

PREMEDICAL EDUCATIONAL REQUIREMENTS

The Journal A. M. A. in the Educational Number gives a list of Approved Colleges of Arts and Sciences and Junior Colleges for the benefit of prospective medical students and admission officers.

The approved colleges in Nebraska as given, are:

Creighton University, Omaha; Doane College, Crete; Hastings College, Hastings; Nebraska Wesleyan University, Lincoln; Union College,* Lincoln; University of Nebraska, Lincoln.

This list is followed by the following special memoranda:

Junior Colleges.—Credentials of premedical work taken in junior colleges (indicated in the list by an asterisk) must show the completion of at least sixty semester hours in subjects of college grade, including the required credits in physics, chemistry, biology and English. Students presenting such credentials must have completed fifteen units of accredited high school work before taking college courses.

Normal Schools.—Students presenting credentials from normal schools, which are organized primarily for the training of teachers, may be accepted if such credentials have the certification of the registrar of the state university that the courses completed by the student are the equivalent of the courses accepted from accredited colleges and universities.

LENGTHY PAPERS

A contemporary (*Mich. Med. J.*) reminds its readers that medical papers should be brief because there are very few medical journals which can accommodate the lengthy paper. This reminds us to state to our contributors that we have more lengthy papers on hand than ever before. The only thing to do is to cut them into two or three parts for publication. This is not desirable, but necessary. We have a number of times reminded our readers that the short, snappy paper is the one that is read. The lengthy paper tires the reader. Medical journals are picked up by physicians at odd moments and the short, crisp items are read while the lengthy article gets little but a glimpse at the title. No independent medical journalist would accept and publish the long drawn out papers a state journal must perforce publish. If you wish to reach the reader "make it short and snappy."

EDITORIAL WISDOM IS CHALLENGED

Rarely does anyone find fault with the work in *The Journal* and equally rarely does anyone bestow compliments. The monotony of this becomes somewhat irksome; so much so that one sometimes welcomes a kick for diversion. Here is a diversion.

The following refers to the leading editorial in the September *Journal*—"The Debt of Ex-Presidents to Organized Medicine." One correspondent says:

> "When you say, 'a man is picked for the presidency, because he is an outstanding man in scientific attainments, or because his activities in the medical organization have seemed to fit him for the place,'—I wonder if you did not get the inspiratory effort from the old Bley Mill.
>
> "Can you tell me that Dr. — — comes in this class? How Dr. — — comes in that class? How Dr. — — comes in that class? How others too numerous to mention come in that class?
>
> "Why not say, 'that with a very few exceptions, the presidents of the Nebraska State Medical Association have been selected because of their political ability and, or, political strategy regardless of any other qualifications.'
>
> "I believe that presidents should be selected because of long years in the service and that the position should be an honorarium. But they are not, and it is not.
>
> "I think a great deal of you, but your editorial does not ring true which is not like you."
>
> —X. Y. Z.

The other says:

> "Congratulations on your editorial on past presidents of the Nebraska State Medical Association. A confrere and I have discussed this several times, especially when Dr. — — came back from California to preside at the annual meeting.
>
> "However we question the statement that presidents are always picked for their scientific attainments or because his position in medical organization have fitted him for the place. That is the way it should be and would like to see it placed on this high plane. But the last few years have had a good idea who would be the next president several months before the meeting. This year, however, several of the boys were up too late the night before and were absent at roll call."
>
> —X X X X

The editor thoroughly enjoyed these letters and passes them on to the profession for what value the suggestions may have.

DISTINGUISHED SERVICE MEDAL AWARDED TO DR. A. F. TYLER

Dr. Albert F. Tyler, Omaha, prominent radiologist and voluminous writer on x-ray science, diagnosis and therapy, was honored by the American Congress of Physical Therapy at its annual meeting in New York recently, by the bestowal of a gold key for devoted labors and outstanding contributions which have raised the discipline of physical therapeutics to a higher standard.

Dr. Tyler has always been a tireless worker in his chosen field. He became interested in x-ray work in his student days; was one of the first to recognize the constitutional effects of over x-ray dosage to the operator; the first to call attention to the production of fibrosis in the lungs in patients treated with x-ray for malignant conditions in the breast or chest wall; the first in Omaha to use the high frequency current for extensive surgical removal of malignant growths.

In bestowing the award, President Ewerhardt said:

"For the living. recognition for distinguished service in the medical sciences is most often difficult to adjudge on account of lack of perspective and the influence of personality that colors their contribution, either too aggressively, or, as often, too retiringly. The American Congress of Physical Therapy, appreciating the many difficulties that beset premature judgment, has nevertheless deliberated upon the outstanding accomplishments in its field and has come to the conclusion that Dr. Albert F. Tyler's devoted labors have been outstanding in nature and have resulted in raising the discipline of Physical Therapeutics to a higher standard."

The importance of this award to Dr. Tyler may be grasped from the full list of names of those to whom awards were made.

Recipients of the awards were Prof. Arsone D'arsonval, Paris; Dr. William L. Clark, Philadelphia; Dr. Frederick De Kraft, New York; Dr. F. Howard Humphris, London; Dr. John Harvey Kellogg, Battle Creek, Mich.; Dr. Howard A. Kelly, Baltimore; Dr. Gustav Kolischer, Chicago; and Dr. Albert F. Tyler, Omaha, Nebraska.

The profession of Nebraska will heartily applaud this recognition of Dr. Tyler's work.

Dr. Tyler was also elected president of the American Congress of Physical Therapy at the annual meeting.

THE ELKHORN VALLEY SOCIETY MEETING

The thirty-sixth annual meeting of the Elkhorn Valley Medical Society occurred at the Norfolk Country club, September 1st, under the presidency of Dr. R. T. Van Metre, with about sixty physicians in attendance. The meeting was an unusually spirited one as indicated by the discussions to the papers presented.

Dr. John Calvert of Pierce presented a case of "Aspiration of Peanut Into the Trachea." which was well discussed by Drs. Buis, Brush, Van Metre, Allerton and Summers.

Dr. George S. Salter of Norfolk gave a case report and treatment of a "Bulbar Type Infantile Paralysis With Drincker Respirator," which was discussed by Drs. Clarke, Owens and Francis.

Dr. Clarke E. Beede of David City reported a case of "Traumatic Rupture of Embryotic Type Kidney," which was discussed by Dr. J. E. Summers.

Dr. H. W. Francis of Bancroft reported a case of "Endarteritis Obliterans (Both Feet) With Gout Complication," which was discussed by Drs. Johnson, Morris, Buis, Summers, Cook and Kolodny.

Dr. Anatole Kolodny of Sioux City gave a very interesting discussion, with slides, of "Surgical Relief of Intractable Pain," which was discussed by Drs. Summers and Francis.

Dr. A. E. Buchanan of Fremont read a paper on "Trigeminal Neuralgia and Inhalation of Trichlor-ethylene for Relief of Pain."

Dr. M. C. James of Columbus gave a case report of "Osteomyelitis Following a Case of Chickenpox." Discussion was short due to late hour and for same reason Dr. Stuart Cook, Randolph, did not report his case of "Pneumonia in Two Weeks Old Child." The program was too long for time allotted and some of the cases reported brought so much more discussion than was anticipated, it did not leave enough time for later reports.

Dr. John D. Reid, Pilger, was elected president; Dr. M. C. James, Columbus, vice president; Dr. E. L. Brush, Norfolk, secretary-treasurer (re-elected).

BUDGETED MEDICAL SERVICE

Budgeted medical service was considered in Omaha last month, but was rejected by the Omaha-Douglas County Medical Society.

The proposal is that the medical society, hospitals and nurses offer the services of all general practitioners, specialists, surgeons and others for any medical or surgical service whatever for a flat price of 3 per cent of the family income.

According to the proposal, this "budgeted medical service" would be limited to families whose income is $2,700 a year or less. It would not be offered to those of higher salaries or income.

The "health policies" so offered to families would be cancellable only because of deceit or fraud. The size of the family would make no difference in the fee.

Unemployed would be carried for three months as delinquent.

Any person who was sick and was a member of the society's health budget plan would choose his own doctor, nurse and hospital.

The medical side of the matter would be controlled by an executive committee chosen by the medical society.

The financial end would be handled by the originator of the plan, who believes 10,000 members can be solicited for the plan in two years.

Each physician or surgeon would be required to list a regular schedule of fees for patients in the $2,700-and-under class.

Each month's receipts under the plan would be pooled and the total of all physicians, nurses' and hospitals' bills chargeable to the plan likewise would be pooled.

If the bills in any one month totaled $15,000 and the income for the month was $10,000, payment would be made to the individual doctor on the basis of two-thirds of his bill. The next month would start with a clean slate.

One must admit that the plan is unique, whatever drawbacks might develop in its application to actual conditions.

A VISIT TO MOUND BUILDERS TOMBS

For more than half a century we have heard of the Mound Builders, whose work remains to puzzle archaeologists today.

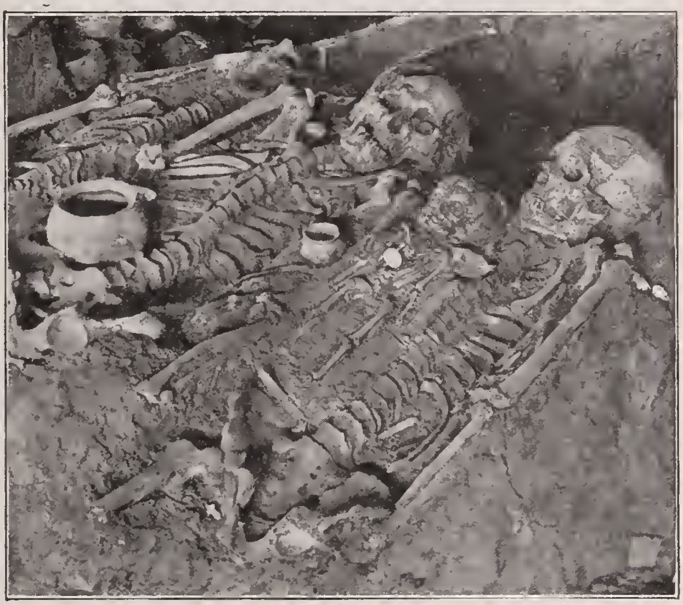
We were privileged, recently, to visit the Dickson Mounds in central Illinois, near Lewistown, and we want the readers to participate in the pleasure of the visit.

The Mounds are situated on the edge of the bluffs overlooking the junction of the Spoon river with the Illinois river. Here have been uncovered from the porous clay soil, in a space less than one hundred feet square (and now protected by a permanent brick building), the skeleton remains and possessions of 230 people of a pre-historic period. These remains are estimated by archaeologists to be more than a thousand years old. The remains have been carefully uncovered and left in their original positions. After discovering the remains by spade digging, they were carefully uncovered by the use of the trowel and when in doubt careful exploration of the ground was done by the use of an ice pick.

The burials occurred at different periods, for some remains are superimposed on others and lie in different directions from those previously buried.

There are family burials—father, mother and child, lying together, the child between the parents; a mother with an unborn babe showing very plainly; groups of five or six in a grave as if death might have occurred simultaneously in an epidemic.

The paleopathologist may find deformed spines and fused vertebrae: collapse of one side of the chest; healed fractures showing improper alignment; skull fractures; impacted teeth.



Skeletal Remains of Father, Mother and Babe
Cut by Courtesy of "Dickson Mound Builders Tombs)

Potsherds, vases and other vessels of design almost similar to the pottery of today are found in the tombs.

Altogether it is a fearful and wonderful sight to behold.

SOCIAL INSURANCE IMPOSSIBLE TO ABOLISH WHEN ONCE ESTABLISHED

The worst feature of social insurance is the fact that when this parasite once gets its suckers well fastened into the vitals of a nation nothing short of either national bankruptcy, a dictatorship, or a revolution will be able to loosen its hold.

Germany, which has had social insurance on its statute books the longest, has for a considerable time been on the verge of bankruptcy. While other facts are operative, we believe that the billion dollars which social insurance costs the nation every year is one of the chief reasons why Germany is unable to make a satisfactory "comeback" to normalcy.

England is not much better off. The chief reason for England's present difficulties is the terrific burden of taxation which she has to carry. One writer says: "A complete understanding of the problems confronting England at the present time involves going back to 1909 when we had just adopted old age pensions and destroyed the foundations of thrift." In 1911 England introduced national insurance when three per cent of its workers were unemployed. After twenty years of operation of the act, seventeen per cent of her workers are out of work. As a partial explanation for this condition let us cite just one example from among scores and hundreds that could be given. A manufacturer found that his orders were only sufficient to give work to all his employees four days a week so he called his workers together and told them the facts. The workers, however, insisted that they would work only three days a week in order that they could draw the dole for the other three days. An

English writer commenting on this says: "It is a great mistake to worry about the much discussed abuses of the system. It is the system which is fundamentally wrong and abuse is inseparable from it."

To get an idea of the tax burden which England is carrying, we need but cite facts. In that country all incomes of seven hundred and fifty dollars per annum are taxed twenty-five per cent. Higher incomes carry an additional surtax. Increased taxes have increased the production-cost of practically all articles of manufacture and, as a consequence, have actually increased unemployment because English industry carrying this extra burden has not been able to compete with other countries in the world markets. In spite of these burdensome taxes and in spite of the fact that living expenses had gone down eleven and one-half per cent, the recent labor government refused to cut the sick benefits ten per cent and put the nation to the expense and turmoil of a national election practically on this issue alone.

The countries just cited are not the only ones encountering similar difficulties. A recent newspaper article contained the statement that there are more than one hundred and fifty federal boards and commissions in Washington each with three or more members drawing salaries and each with a bevy of clerks, most of them just drawing salaries. Many of these were created during the World war. When a few far-sighted individuals remonstrated against the appointment of so many boards and commissions they were assured that they would all be abolished at the end of hostilities. It is now more than fourteen years since the signing of the Armistice but not one board has as yet been abolished.

Another illustration is the franking privilege to country newspapers. This privilege was extended to them when it was deemed desirable to disseminate news and information to rural inhabitants, particularly to detached settlements. It was a wise and legitimate enactment at the time but now it is just a plain nuisance and yet no congressman would dare to suggest its abolition. It is costing the taxpayer and consumer a great deal of money and serves no useful purpose. A town of ten thousand and even fewer inhabitants usually has two and sometimes three local papers all enjoying this privilege. The local merchants are compelled to advertise in all of them, the expense of which must of necessity be passed on to the consumers. Incidentally this favors the mail order houses to the detriment of the local merchant.

There are many reasons why it is almost impossible to repeal the laws governing such practices. One reason is that executives and legislators do not want them repealed because it reduces the power which they derive through political patronage. The more patronage the individual in office has at his disposal, the more difficult it is to dislodge him. Even today it is very difficult to defeat a public office holder with large political patronage, no matter how inefficient he may be, except by another who either already has large political patronage or who promises jobs to his supporters irrespective of their qualifications. Thus in many elections the voter is simply left to choose between two undesirable candidates. Already the number of payrollers has become so large and so politically active and influential that they yield great power in both political parties. If we then add compulsory health insurance we will add further thousands to the lists of our civil employes. Those who are not in government employ will be powerless to control government and their only function will be to pay the taxes which others impose upon them. Instead of increasing the number of government officials and employees, the ideal to be constantly kept in mind and striven for in this country is to permit the private citizen to perform all those functions that he can best perform and that make for independence, self-reliance, and strength of character and to have the government do only those things which the individual cannot do satisfactorily. We maintain that centralization in government and paternalism have already gone much too far and that social insurance would simply be another step in the wrong direction.

Another reason why it will be difficult to repeal such laws is the fact that men in the different services of the government do not dare to expose its faults for fear of being accused of disloyalty. Reports must be couched in the most mild and ineffective language possible and then they must not be released to the public but allowed to die as still-births in the departments. We all know what happened to General Mitchell who dared to disregard these rules. Major-General Robert Alexander also tells in the introduction to his Memoirs of the World War just how this worked in at least one other instance.

In most countries which have social insurance such laws were first suggested and urged by welfarers, uplifters, and visionaries who unwittingly played into the hands of practical politicians. Even now few seem to realize that bureaucracy in a republic may become just as unreasonable, oppressive, and ruthless as a despotism.

It will be interesting to see whether we shall be able to profit by the experience of others or whether as a nation we belong to that class of human beings who can learn only by dire personal experience or from national disaster.

—**Edward H. Oschsner, Chicago.**

DERMATOLOGIC HINT NO. VIII

Finding a positive Wassermann in a patient with a skin eruption does not prove that the eruption is syphilitic.

—**Donald J. Wilson, Omaha.**

OBSTETRICAL AND GYNECOLOGICAL HINTS. NO. VIII

Post menopausal bleeding is due to malignancy in about 90% of cases. It would be wise to insist on diagnostic dilatation and curettage, with biopsy of suspicious areas on the cervix when the patient is first seen. Procrastination has meant death to countless women.

—**Harold S. Morgan, Lincoln.**

MEDICO-LEGAL DISABILITIES

Compensation is a form of indemnity against loss resulting from reduced earning power in the industry.

An industrial disability is a recognizable and measurable disturbance of function or change in the character form or type of tissue which reduces the earning power in the industry. Physical disability is a departure from normal. Industrial disability is a disability applied to earning power.

A man may have little physical disability but a great industrial disability.

—**Czar Johnson, Lincoln.**

EDITORIAL PARAGRAPHS

New ad this month, the Bunten Clinic, Cheyenne.

The State Labor Commissioner has announced a reduction of 20% to 25% in medical fees for compensation cases, to go in effect October 1st.

The twenty-second annual Clinical Congress of the American College of Surgeons will be held in St. Louis, October 17-21, with headquarters at the Jefferson hotel.

By means of an organic solution injected into the body and subjected to x-ray, ultra violet rays are produced that are deadly to cancer cells, so it was announced to the American Chemical society, lately.

Lack of funds at present precludes furnishing a part of the Douglas County hospital, intended to house fifty more patients, and for the same reason renovation of the mental ward in the old building must wait.

The Committee on the Cost of Medical Care has arrived at the conclusion that $125,000,000 annually is spent for treatment by cultists—osteopaths, chiropractors, naturopaths, Christian scientists and new thought healers.

Dr. Max Thorek, Chicago, stated before the American Congress of Physical Therapy, that a thoroughly reliable test to determine if cancer is present in the human system is of more immediate importance than the discovery of the disease's cause.

An Indian hospital is being constructed at Winnebago, Nebr., at a cost of $250,000, by the Indian bureau. An exhaustive survey made several years ago, showed an alarming number of cases of tuberculosis among the Winnebagoes, a condition which it is hoped to improve by modern facilities for their care.

More cases of anthrax are being reported among cattle in Nebraska, and another case of human infection, in a veterinarian, is reported. Anthrax occurs in sheep, cattle, and may occur in hogs kept in cattle yards and may be transmitted to humans from contact with animals and lastly may be transmitted by flies.

Looking several months ahead as an editor must we can see that we can use some more well prepared papers for the *Journal*. The nature of our contract with the publisher of the *Journal* is such that with the decline in advertising we can devote more space to reading matter and this has made possible more rapid publication of the annual meeting material this year.

Surgeons have for years been troubled by the extreme strain on the wrist of rubber gloves, caused by pulling them on and off. One of the major problems of manufacturers has been to provide a glove which would not tear at the wrist. Protection against tearing the gloves around the wrist line is provided by one manufacturer by a rubber band 1¼-inches wide which allows the wearer to pull on the glove with vigorous tugs.

The Ninth Councilor District Medical Society will hold a meeting at State Hospital at Kearney, October 11. The Nebraska State Tuberculosis Association will participate in the program with a presentation by Dr. J. A. Myers of the University of Minnesota on the subject of "Childhood

Infection and Disease" together with papers by Dr. J. W. Duncan and Dr. J. A. Weinberg of Omaha on surgical topics relative to pulmonary disease.

Out of the state at the time of the State Fair, the editor is unable to report on the State Fair Health activities from personal knowledge; but is able to report that periodic health examinations were given to 150 adults, 63 children, 173 babies, 26 4-H club boys and girls, and 4 prenatals; making a total of 416 examinations. Approximately one hundred physicians and dentists assisted in making these examination. A better report may be expected next month.

A medical friend of many years of experience says: "Medical organizations, from the county unit, district, state, and national association, have during my professional career been my chief source of inspiration, and have served the purpose of post-graduate course. The recompense for the attendance has been generous, in an increased understanding of some scientific problems; an improved technic knowledge; social factors; and a more exalted opinion of the noblest profession on earth. For all of this and much more I am grateful to organized medicine."

The next written examination of the American Board of Obstetrics and Gynecology will be held on Saturday, October 22, at 2 p. m., in 19 different cities of the United States and Canada. In order to reduce traveling expenses for candidates special arrangement may be made through the secretary for taking the written examination at any city other than those regularly specified where there is a diplomate who can be empowered to conduct the examination. This arrangement does not apply to the general, clinical examination. For application blanks and other information, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburg, Pennsylvania.

Dr. Czar Johnson, Lincoln surgeon, who is a keen analyst, recently published an article in the Lincoln State Journal showing that the cost per patient treated at the Orthopedic hospital during the biennium of 1929-1931 amounted to at least $1,232.10 and asserted that all the 183 patients could have been treated at any other hospital in Lincoln for the 4% interest charge on cost of the Orthopedic hospital plant and maintenance fund. He concludes: "State medicine may be the solution of the cost of medical service, but the report of the Orthopedic hospital does not indicate it." The Orthopedic hospital maintains a school for the patients, which involves considerable expense. This may not have been taken in consideration, in making the estimate, which to the average person seems high, whichever way figured.

Under the Code of Hammurabi, the Babylonian physician of 4,000 years ago had his rights well defined, says a writer in the *Presbyterian Advance*, who criticizes the medical profession for insisting on the "ancient and traditional rights of medical practice" as did the American College of Physicians at the Baltimore meeting. "The physician was not permitted to make whatever charge he saw fit, not even the surgeon had that privilege: all fees were scheduled by law. The rich freeman when cured of cataract was in no danger of being mulcted a hundred shekels; the legal price for his operation was ten shekels. The workingman could only be charged five shekels, the slave (through his owner) only two, for the same treatment. That is, if the operations were successful! If the free citizen lost his eye as a result of the surgeon's effort, that surgeon's unskilful hand was cut off, and if a slave should die under the operation that doctor was compelled to supply the owner with a slave of equal value! It may be interesting to know also that the same principle of payment for success and punishment for failure was similary applied to the practice of the physician's humbler associate, the veterinary surgeon."

NECROLOGY

Cass G. Barns, Madison, Nebr. (retired); native of Indiana; Eclectic Medical College, Cincinnati, 1874; practitioner at Laporte, Ind., from date of graduation until 1881 when he moved to a homestead near Albion, Nebr., where he continued practice until 1886, when he retired from practice to engage in commercial activities; surgeon general of the Nebraska national guard under Governor Poynter, 1899-1900; a democratic politician of some force; a writer of considerable literary ability; author of "The Sod House," an account of pioneer experiences; engaged in newspaper work for some years and until recently; died September 11, 1932, aged almost eighty-four years. Dr. Barnes is survived by his widow, two sons and two daughters. They are Dr. Frank Barns, physician at Albion; Donald E. J. Barns, professor of history at the University of Washington, Seattle; Miss Viola Barns, instructor in history at Mt. Holyoke college, South Hadley Falls, Mass., and Mrs. Samuel Waugh of Lincoln.

Edgar A. Hanna, Ansley, Nebr.; native of Petersburg, Ill.; Ensworth Medical College, St. Joseph, Mo., 1895; practitioner at Ansley thirty-eight years; died August 23, 1932, aged about fifty-eight years. He was unmarried.

Thomas J. Jones, St. Edward, Nebr.; native of Ohio; University of Iowa, Homeopathic College of Medicine, 1893; practitioner at St. Edward for thirty-eight years; died at the Veteran's hospital, August 24, 1932, aged about sixty-five years. One son survives.

Henry C. Walker, Alliance, Nebr.; native of Manchester, Iowa; State University of Iowa College of

Medicine, 1925; physician at Alliance for six years; member Nebraska State Medical Association; died September 8, a month after suffering a cerebral hemorrhage, aged thirty-nine years. A widow survives.

Thomas J. Vanderhoof, Scottsbluff, Nebr.; Lincoln Medical College, 1908; practitioner at Scottsbluff since 1919; member Nebraska State Medical Association; in medical corps of the army during the World war; died September 1st, 1932, after an illness of three years from Hodgkin's disease, aged forty-seven years. A widow and son survive. He was a brother of Dr. D. W. Vanderhoof of Scribner.

A. Winfield Ackley, Hastings, Nebr. (retired); College of Physicians and Surgeons, Keokuk, 1875; Rush Medical College, 1880; pioneer physician of Adams county; practitioner at Juniata from 1877 until a few years ago, a period of fifty years; a physician who covered an extensive territory in his practice and was noted for loyalty to his patients; died September 9, 1932, aged eighty-four years.

TUBERCULOSIS ABSTRACTS

Sleep, so necessary to human existence, and especially so to the tuberculous, depends upon the individual's ability to relax. Relaxation in turn depends at least in part upon wholesome physiological fatigue. In recent issues of the Journal of Outdoor Life there are three articles which summarize the latest scientific thought on this subject. Dr. Kleitman is Associate Professor of Physiology at the University of Chicago; Dr. Jacobson is Assistant Professor of Physiology at the University of Chicago; and Dr. Rice is Professor of Epidemiology at the University of Indiana School of Medicine. A study of their articles will repay the physician who is dealing with tuberculosis or any other type of "nervous" patients.

SLEEP, RELAXATION AND FATIGUE

SLEEP IN TUBERCULOSIS

Sleep is generally looked upon as the most complete form of rest and is therefore of paramount importance to the tuberculosis patient. The sleeping person takes no notice of events and does not respond to changes in his environment.

The position of the body in sleep is of relatively little importance, since no position is held for any length of time. The average time between stirs as determined by actual tests is about 10 minutes and the longest about one hour. Since these movements are of very short duration the total time one spends in moving about probably does not exceed five minutes in a night. Sleep, then, may be looked upon as a period of almost complete muscular inactivity.

During sleep there is a decrease in activity of the heart, which leads to a lowering of the arterial blood pressure. These in turn decrease the danger of hemorrhage in disease. The absence of disturbing external influences also has a beneficial effect upon the circulation and respiration.

Sleep decreases the basal metabolism and tends to reduce the temperature. Muscular activity results in the production of large quantities of heat, which cannot be dissipated as fast as they are produced. This leads to a temporary rise in temperature. Through rest in bed and sleep one can hold the temperature at a lower level.

Practically all of the glands in the body secrete less during sleep than during the waking state. A notable exception is found in the sweat glands, a fact which is well known to the tuberculous. The cause of increased secretion of sweat in sleep probably represents an attempt of the body to get rid of an excess of heat accumulated because of insufficient ventilation of the space between the skin and the bed clothes and also of the bedroom.

There is decreased wear and tear of the living matter of the body during sleep and a consequent upbuilding, which is especially beneficial to the tuberculous. Under these conditions it is desirable to increase the duration of sleep as much as possible.

Everything tending to cut out sensation favors the onset of sleep. The newborn baby sleeps for eighteen to twenty-four hours a day, waking up every four or five hours because of hunger or discomfort, but such a baby is blind and deaf for the time being and experiences none of those sensations that may disturb an adult. Sound sleep is promoted by regular hours and regular habits. Worry, fear, anger or undue excitement may produce restless sleep because they interfere with relaxation. When one cannot sleep, it is well for the sufferer from insomnia to give up trying and to resign himself to lying awake. It should be noted that the decrease in muscular, circulatory, respiratory and metabolic activities occurring in sleep is largely due to rest in a horizontal position, and lying quietly awake, therefore, is nearly as good as sleep.—Sleep: Its Value in Tuberculosis, N. Kleitman, Ph. D., Jour. of the Outdoor Life, Feb., 1932, p. 89.

RELAXATION IN TUBERCULOSIS

Observation of tuberculous patients during their daytime rest-hours generally reveals incompleteness of relaxation. Patients confined to bed for a long time show various forms of restlessness, particularly in the form of excessive unproductive coughing. Unrest shows itself also in the form of so-called mental symptoms or "nervousness." A more fitting phrase is "high nerve-tension."

In such so-called nervous symptoms, there is always contraction of muscles, which occurs when the nerves leading to and from the muscles are in action. These muscular contractions, no matter how slight, can be measured and charted by a galvanometer.

When muscles contract, movements occur in tendons, joints and skin, producing sensations in these several regions, which may be grouped together under the name "Proprioceptive sensations." This term may be used to include all sensations aroused by changes within the body of the individual in contrast with those aroused by changes without, such as sound or light. Patients may be instructed to relax, and as they do so there is a corresponding diminution of proprioceptive sensations. Progressive relaxation brings about not merely muscular, but also mental rest.

Merely advising a patient to relax does not accomplish this desired end. He must be instructed just as he would if he wished to learn mathematics or golf. The patient who suffers from restlessness, insomnia, excessive mental activity or emotion, or from spastic states does not learn to be relaxed in a week or a month. A prolonged period of training is required during which the patient gradually learns to recognize tenseness, even if slight, and acquires the ability to relax until relaxation becomes automatic. In this way he learns also how to avert fatigue.—Relaxation and Pulmonary Tuberculosis, Edmund Jacobson, Ph. D., M. D., Jour. of the Outdoor Life, Apr., 1932, p. 209.

FATIGUE, GOOD AND BAD

There are easily a half dozen physiological states that are commonly called fatigue. Yet none of them is the real thing in the strict sense of the word, such as the experimenter in physiology produces when he stimulates a muscle until it cannot act any longer. Lack of muscular exercise, with its consequent stagnation of blood and lymph may be one false form of fatigue. Another may be laziness or a similar state brought about by suggestion. Or boredom may be confused with fatigue. A man waking from a sound sleep may think he is tired out, but the process of stretching, yawning, or bathing soon drives his so-called fatigue away.

Fatigue may be described under two forms, physiological fatigue and pathological fatigue.

Physiological fatigue is one of the greatest boons in human existence. It results from the expenditure of muscualar and mental energy in doing a task which one feels is worth while, and from which he receives a resultant satisfaction.

Pathological fatigue, however, may be positively devastating in its effects. The pathologically tired person is "to tired to eat," "too tired to sleep," "too tired to get out and have a good time." Nagging, scolding, and complaining, the pathologically tired person makes his or her home and family miserable. Such a state may be produced by many different things or combinations of things such as disease, worry, dissatisfaction or discontent with one's work or life and its outlook. Or, the task on which the individual is working may be as a tyrant crushing the life out of its victims. And again, the task may be unsuited to the particular worker.

It is exceedingly important that we should be able to recognize as early as possible the evidences of physical breakdown resulting from any of these or other forms of overstrain. Most of these signs are simply those of continued pathological fatigue. The following suggestions are offered:

(1) If you are too tired to enjoy your dinner at the end of the day;

(2) If you cannot relax after leaving the job;

(3) If you cannot sleep at night;

(4) If you despise your work and dread to begin in the morning;

(5) If you are getting cross and impatient;

(6) If you are jumpy and crack up easily when the unexpected happens;

(7) If you are losing weight without apparent cause;

(8) If you are losing your snap and pep;

(9) If you are worrying about things you cannot help;

(10) If you cannot laugh;—

It is time to make a change.

Fatigue—Good, Bad, and Indifferent, Thurman B. Rice, M. D., Jour. of the Outdoor Life, May, 1932, p. 273.

THE SOCIETIES

A special meeting of the **Scotts Bluff County Medical Society** was held at the Scottsbluff Country club at Gering, on August 25. Twenty-four members and guests were present and after an excellent steak dinner and a short business session the meeting was turned over to Dr. Chas. F. Moon of Omaha, who addressed the group on "The Importance of the Ischial Spines." He gave a clear, concise explanation of the value in these landmarks to the obstetrician and gynecologist, based upon their use in four particular ways:

1. The use of the Ischial spines as a landmark in determining whether or not a patient has a prolapse.
2. Softening of tissue over the spines an important and early sign of pregnancy.
3. An estimation of the inter-spinus distance being important because it is the shortest diameter of the pelvis.
4. Important landmark in determining engagement and the station of the head in delivery.

The regular quarterly meeting of the **Cedar, Dixon, Dakota, Thurston, Wayne Counties Medical Society** was held August 25, at Wakefield, with the Wakefield physicians acting as hosts.

An interesting program was presented during the afternoon. Dr. J. W. Duncan of Omaha gave an interesting talk on "Common Acute Injuries." A paper on "Modern Infant Feeding" was given by Dr. Floyd Clarke of Omaha, and Dr. R. H. McBride of Sioux City presented an address on "Meningitis in Children."

There were present at the session 20 physicians of the five counties.

The **Sixth Councilor District Medical Society** meeting at David City, September 12, was devoted largely to a consideration of Fractures. Drs. Beede, Burdick and Schroeder presented cases of fracture which were discussed by Dr. R. D. Schrock. Dr. C. W. M. Poynter presented a paper on "Peritonitis" which was discussed by Dr. J. E. Summers.

HUMAN INTEREST TALES

Dr. J. W. Carr has located at Ulysses.

Dr. T. J. Kerr, North Platte, recently suffered a broken leg.

Dr. Charles F. Moon, Omaha, spent his vacation in the Black Hills.

The village of Surprise, is without a physician, but has two drug stores.

Dr. and Mrs. A. O. Fasser, Fremont, visited the Black Hills in August.

Dr. E. F. Zoerb, Scottsbluff, was in Denver for medical care in August.

Dr. J. F. Premer, Benkelman, spent the hay fever season at Fairplay, Colo.

Dr. and Mrs. Adolph Sachs, Omaha, spent six weeks on the Pacific coast.

Dr. F. L. Wilson and family, Stuart, enjoyed an outing in Yellowstone Park.

Dr. R. E. Roche, Sidney, spent a month at Rochester, Minn., and Dubuque, Iowa.

Dr. C. C. Shepard and family, Ord, have gone to California for an indefinite stay.

Dr. and Mrs. H. Melerian, Plainview, have returned from a trip to Yellowstone Park.

Dr. A. J. Mullman, Talmadge, has sold his interests at that place to Dr. T. L. Grizka.

Dr. J. M. Huermann, Benson, and family, spent their vacation in Denver and environs.

Dr. Harriet McGraw of Tryon was reported ill in a North Platte hospital in August.

Dr. and Mrs. A. O. Peterson, Omaha, spent the summer at Pineview, South Dakota.

Dr. and Mrs. T. A. Peterson, Holdrege, have returned from a summer's trip abroad.

Dr. and Mrs. W. I. Devers, Upland, visited in eastern Nebraska and South Dakota, in August.

Donald Furness, Omaha, medical student, was drowned in the Missouri river in August.

Dr. and Mrs. H. C. Pedersen, Fremont, returned from a summer's special work in Vienna.

Dr. and Mrs. R. P. Carroll, Laurel, motored in the Colorado Rockies the latter part of August.

Dr. F. J. Condon and family, St. Paul, visited relatives at Fort Dodge, Iowa, the latter part of August.

Dr. Harry Vander Kamp, formerly of Chadron, has located at Tomah, Wisconsin, his native place.

Dr. and Mrs. B. B. Davis, Omaha, covered 6,000 miles in a motor trip east during the summer.

Dr. Edward McKinney, Nebraska City, is reported to have suffered an apoplectic attack, recently.

Dr. and Mrs. E. H. Dwyer, Omaha, spent three weeks in the lake country of northern Minnesota.

Dr. D. D. Hughes, Fairbury, suffered the loss by theft from his car of an instrument and medicine case.

Dr. H. R. Elston and family, Humphrey, spent their vacation fishing in northern Minnesota and Manitoba.

Dr. and Mrs. W. J. Kavan, Clarkson, spent some time in Estes and other Colorado parks late in August.

Dr. and Mrs. L. E. Dickenson, Ravenna, motored to points in eastern Nebraska and South Dakota, in August.

Dr. Roscoe Smith, Lincoln radiologist, was reported critically ill following an appendectomy, in early August.

Dr. A. D. Mahaffey has sold his good will at Valparaiso to Dr. J. W. Hervert of Lincoln, and will move to Texas.

Dr. W. H. Hahn, Potter, has gone to Vienna for two years of special work in eye, ear, nose and throat conditions.

Dr. Kenneth Baker, Holdrege, is taking special work in obstetrics and gynecology in Washington University, St. Louis.

Dr. J. Marshall Neely, formerly of St. Paul, Minn., has located in Lincoln in association with his father, Dr. J. M. Neely.

The Lutheran Hospital association is said to be considering taking over the North Platte hospital, recently completed.

Dr. S. A. Swenson, Oakland, has returned from Sheridan, Wyo., where he spent some time recuperating from a recent illness.

Dr. Esther McEachron, Omaha, contributed an article, "Physical Examination for the Healthy Child," to Hygeia for September.

Dr. and Mrs. D. D. Leeper, Holbrook, motored to Missoula, Mont., the Yellowstone park and through the Black Hills, in August.

Dr. Henry Walters, formerly of Lincoln, has acquired the office equipment of the late Dr. Douglas Hansen, at Nehawka, and has located there.

Dr. and Mrs. Charles Lucas, Shelton, visited the boyhood home of the doctor at Bloomington, Ill., recently, and also historic places in Springfield.

O. Gilbert Peskin, Omaha, was sentenced to thirty days in jail for practicing medicine without a license. He was conducting a so-called "health home."

Dr. J. P. Lord, Omaha, pleaded for coordinated aid to crippled children from luncheon clubs when he spoke to the Triangle club at the Conant hotel.

BOOKS RECEIVED

The Practical Medicine Series, comprising eight volumes of the year's progress in medicine and surgery combined into five volumes as follows:

OBSTETRICS, edited by Joseph B. DeLee, A. M., M. D., Professor of Obstetrics, University of Chicago Medical School; Attending Obstetrician and Medical Director, Chicago Lying-in Hospital and Dispensary.

GYNECOLOGY, edited by J. P. Greenhill, B. S., M. D., F. A. C. S., Attending Gynecologist, Cook County Hospital; Associate in Obstetrics, Northwestern University Medical School. The obstetrics section covers 299 pages and the gynecology section covers 287 pages. 16 mo. Cloth cover.

GENERAL THERAPEUTICS, by Bernard Fantus, M. S., M. D., Professor of Therapeutics, University of Illinois College of Medicine; member, Revision Committee United States Pharmacopeia and of National Formulary Revision Committee, and Louis B. Kartoon, B. S., M. D., Instructor of Medicine, University of Illinois College of Medicine. This book contains 467 pages, 16 mo., cloth cover.

DERMATOLOGY AND SYPHILIS, edited by Fred Wise, M. D., Professor of Dermatology and Syphilology, New York Post Graduate Medical School and Hospital of Columbia University and Marion B. Sulzberger, M. D., Associate in Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University.

UROLOGY, edited by John H. Cunningham, M. D., Associate in Genito-Urinary Surgery, Harvard University Post-Graduate School of Medicine. The section on Dermatology and Syphilis covers 217 pages and the section on Urology covers 201 pages, 16 mo., cloth cover.

NEUROLOGY, edited by Peter Bassoe, M. D., Clinical Professor of Neurology, Rush Medical College of the University of Chicago.

PSYCHIATRY, edited by Franklin G. Ebaugh, A. B., M. D., Professor of Psychiatry, University of Colorado Medical School; Director, Colorado Psychiatric Hospital; Associate Director Division of Psychiatric Education, the National Committee for Mental Hygiene. The Neurology section contains 285 pages and the Psychiatry section 122 pages. 16 mo., cloth cover.

GENERAL SURGERY, edited by Evarts A. Graham, A. B., M. D., Professor of Surgery, Washington University School of Medicine; Surgeon-in-Chief of the Banes Hospital and of the Children's Hospital, St. Louis. 804 pages, 16 mo., cloth cover.

NURSING SERVICE AND INSURANCE FOR MEDICAL CARE IN BRATTLEBORO, VERMONT: A Study of the Activities of the Thomas Thompson Trust, by Allon Peebles, Ph. D., and Valeria D. McDermott. With an evaluation of the Nursing Problem by Violet H. Hodgson, R. N., and Catharine Tucker, R. N., and others. Paper, price 60 cents. The University of Chicago Press.

THE MEDICAL SERVICE OF THE HOMESTAKE MINING CO.: A Survey of a Community Medical Service operated under industrial auspices. By Louis Reed, Ph. D. Paper, price 60 cents. University of Chicago Press.

PRINCIPLES OF CHEMISTRY, An Introductory Textbook of Inorganic, Organic and Physiological Chemistry for Nurses and Students of Home Economics and Applied Chemistry With Laboratory Experiments, by Joseph H. Roe, Ph. D., Professor of Biochemistry, George Washington University Medical School; Lecturer in Chemistry, Central School of Nursing, Washington, D. C., Captain, Sanitary Division, U. S. Medical Reserve. 486 pages, 12 mo., third edition, Published by The C. V. Mosby Co., St. Louis. Price $2.50.

AN INTRODUCTION TO DERMATOLOGY, by Richard L. Sutton, M. D., Sc. D., LL. D., F. R. S. (Edin.), Professor of Diseases of the Skin, University of Kansas School of Medicine, and Richard L. Sutton, Jr., A. M., M. D., Visiting Dermatologist to the Kansas City General Hospital. 565 pages, 16 mo., with 183 illustrations. Published by the C. V. Mosby Co., St. Louis. Price $5.00.

MENTAL DEFICIENCY DUE TO BIRTH INJURIES, by Edgar A. Doll, Ph. D., Director of Research, The Training School at Vineland; Winthrop M. Phelps, M. D., Professor of Orthopedic Surgery, Yale University School of Medicine; Consultant on Birth Injuries, The Training School at Vineland and Ruth Taylor Melcher, M. A., Research Assistant, The Training School at Vineland. 289 pages, 8 mo. Published by the MacMillan Co., New York. Cloth cover. Price $4.50.

THE SPUTUM, Its Examination and Clinical Significance, by Randall Clifford, M. D., Associate in Medicine; Peter Bent Brigham Hospital; Assistant in Medicine, Harvard Medical School; formerly Associate Physician and Director of Pulmonary Clinic, Massachusetts General Hospital. 167 pages, 8 mo.., with illutrations. Published by the MacMillan Co., New York. Cloth cover. Price $4.00.

THE DOCTOR

The news passed quickly around our little town. The doctor was dead. Soberly, dazedly, we talked about it. Only yesterday he had been going about his usual rounds, bringing courage and confidence into stricken homes. Whether our illnesses had been trivial or great, we had looked to him with almost childlike trust; and somehow, with his pill case and his heartiness, he had always justified our trust. Now, with the doctor gone, the threat of sickness seemed a dire and terrible thing. Somebody else would come, of course, to sit in his office and visit our homes when we were sick—someone, perhaps, with as much medical skill as the old doctor. But it would not be the same. I said something of the sort to the judge who was the doctor's oldest friend. The judge now sat on the Supreme Bench but he and his old friend, as young lawyer and young doctor, had come to the town before, years before.

The judge nodded. "Medical skill is only half of it," he said. "The doctor knew us. The only person in town whom he didn't thoroughly understand was . . . himself."

"A few years ago I addressed the state medical society. I spoke on 'A Layman's Ideal of a Family Physician.' When I finished, one of our most distinguished surgeons came up to congratulate me.

" 'Judge'," he said, 'you have described a man who represents all that is unselfish, noble and humanly great in our profession. But I doubt if such a man ever lived.'

"Oh, yes, he does," I said, and I nodded toward the doctor, down at the other end of the hall. "I was describing that man."

"But the doctor," concluded the judge, "never suspected it."

No, he had no room in his mind for self-righteousness. He lived for others. And the men who do that, whether they are doctors, lawyers, butchers, bakers, or candlestick makers, are the men whose places on this earth can never be wholly filled.—Benjamin Russell.

A woman, well on in years, entered a druggist's and said:

"Have you any creams for restoring the complexion?"

"Restoring, miss? You mean preserving!" said the druggist, heartily.

"And he then sold the woman $17 worth of complexion creams."

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CONTENTS

Page

Peptic Ulcer Syndrome Without Ulcer, Andrew B. Rivers, M. D., and Frances R. Vanzant, M. D. 465

The Restoration of Paralytic Deformities and Disabilities of the Lower Extremities, John Prentiss Lord, M. D., F. A. C. S. 468

Prognosis in Surgery of the Abdomen: The Acute Appendix, J. E. Summers, M. D. 473

Diseases of the Thyroid Gland, Byron B. Davis, M. D. 477

Purpuras, A. S. Rubnitz, A. B., M. D. 482

Hyperthyroidism and Neurasthenia, W. J. Arrasmith, M. D. 486

Osteomyelitis of the Skull, C. G. Moore, M. D. 489

EDITORIAL—

The County's Liability for Medical Service 492

Poor Man Without Funds, Property, or Credit, Ward of County, Not of Doctor 492

Page

Joint Meeting Eleventh and Twelfth Councilor Districts 493

Present Status of Malpractice Insurance in Nebraska 494

The Presumptive Kahn Test 495

Group Purchase of Medical Care 495

Some Problems for the American Red Cross 497

Tuberculosis Hint. No. I 498

Dermatologic Hint. No. IX 498

Obstetrical and Gynecological Hint. No. IX 498

Medico-Legal Disabilities. No. III 498

Editorial Paragraphs 498

Necrology 500

Tuberculosis Abstracts 500

Auxiliary Notes 501

The Societies 502

Human Interest Tales 502

PEPTIC ULCER SYNDROME WITHOUT ULCER*

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and
FRANCES R. VANZANT, M. D.,**
Rochester, Minnesota.

INTRODUCTION

In the last few years, we have observed an increasingly large number of cases in which symptoms usually attributable to peptic ulcer were present, and in which we were unable to demonstrate lesions by the fluoroscope. In some of these cases the characteristic symptoms usually attributable to peptic ulcer were so definite and their response to the approved therapeutic measures so convincing that we felt the roentgenologists must have failed to recognize lesions which were actually present. As more of these patients presented themselves for examination, opportunities for closer study of this syndrome led us to postulate that in many instances, although the symptoms, as a rule in an attenuated form, were usually characteristic of peptic ulcer, they were possibly caused by other mechanisms than by a lesion in the stomach or duodenum.

A pertinent factor of significance seemed to be that the patients were usually highly nervous, and that these symptoms came on during periods of unusual nervous or physical fatigue. The establishment of an ulcer-like syndrome characterized by heartburn and epigastric pain several hours after a meal, with relief from food and soda, was accomplished at times with remarkable rapidity on the occurrence of some particularly disturbing incident. The cessation of symptoms was frequently very abrupt when the cause of the patient's concern was alleviated or had been satisfactorily adjusted. The information was volunteered by many of the patients that when they were on a vacation, or even with the prospects of a pleasant holiday, their symptoms soon disappeared. In most instances the episodes of distress were not very severe, and were brief. The symptoms may have occurred only after one or two meals, during a particularly busy day, or perhaps there may have been recurring periods of heartburn coming on for four or five consecutive days. In most of these cases, roentgen-ray evidence of a lesion was entirely absent; in others there was a certain amount of spasm suggesting irritability of the pylorus or duodenum. In some of these cases peptic ulcers developed subsequently, but the institution of a program of treatment which included a great deal of rest and relaxation, more recreation, less responsibility, and a bland diet with a few alkalies, was usually sufficient to clear up the symptoms promptly. There were other cases in which histories were so characteristic of peptic ulcer and the distress became so incapacitating that laparotomy was advised. Ulcers of the posterior wall of the duodenum were demonstrated in some of these cases, but in a number of them organic cause for the complaints was not demonstrable. In still another group, pylorospasm, either with or without demonstrable histologic changes in the pyloric sphincter, were discovered.

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*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 24-26, 1932.

**Fellow in Medicine, The Josiah Macy, Jr., Foundation, on duty in The Mayo Foundation.

We have recently reviewed thirty-two histories of cases in which definite characteristics of ulcer were exhibited, but at operation, none of the lesions usually accused of being responsible for such syndromes was found. It was obvious that the syndrome usually accepted as being diagnostic of peptic ulcer can be found in cases in which ulcers are not present.

It has long been noted that certain types of individuals seem especially liable to the development of peptic ulcer. Anatomic and physiologic factors have been measured in an effort to apply some sort of yardstick to the characteristics attributed to such individuals. "Ulcer diatheses" and "ulcer constitutions" have been described, and it has been suggested that disharmony in the structure and function of the peripheral blood vessels might be predisposing causes to the development of peptic ulcer in certain cases. The effort to find some constant invariably applicable to such cases has not clarified the situation. Although there may be a single constant or even multiple constants in the predisposition to ulcer, it would seem to us that the factor of greater significance is a fluctuating one.

There seems to be a pertinent analogy between the types of individuals who are subject to the ulcer-like syndrome without ulcer and the types of individuals who actually have peptic ulcer. In both types the individuals are astute, efficient, aggressive, and high-tensioned, and it is a matter of interest that in both types, the symptoms frequently reestablish themselves during or subsequent to periods of unusual stress.

The analogy between the two syndromes can be traced still further: In cases of uncomplicated peptic ulcer the symptoms usually become readily controllable when the patient ceases active work, evades responsibilities, and takes a vacation. It has been pointed out that the pseudo-ulcer syndromes often promptly disappear under similar conditions. The interesting analogy between these syndromes and the type of patients who experience them and their general behavior, extending into the minutest details of symptoms, suggests that the disturbance which is at the root of the entire syndrome is identical in both instances and that the crucial derangement is in the nervous system. Factors which seem capable of influencing periodic reactivations of ulcer, which can prevent the healing of such lesions, and which at times are entirely capable of producing symptoms exactly mimicking ulcer even although there are no demonstrable lesions in the stomach or duodenum, must be of some significance in the cause and course of these syndromes. The variability in the degree of these psychophysiologic tendencies probably represents the fluctuant which determines if and when these syndromes shall arise. The intimate mechanisms responsible for the symptoms are as yet imperfectly understood, but it would seem that in the parasympathetic unbalance affecting gastric or duodenal motility and secretion, there must lie the stage setting which is one of the prerequisites to the development of peptic lesions and to the causation of the syndrome usually attributed to peptic ulcer even in its absence. It is entirely conceivable that in the absence of ulcer, and when the tissues are not traumatized or when they have normal protecting mechanisms, a syndrome similar to that experienced with ulcer may develop, entirely dependent on these disturbed neurogenic factors. With a return of normal nervous reactions the symptoms clear up quickly. With a persistence of disturbed psychophysiology, chronic spasm incident to this may result in actual changes in the pylorus, with definite demonstrable hypertrophy of muscle. In the presence of increased vulnerability of gastric or duodenal tissues, it is suggested that ulcer might more easily be implanted in this soil in cases of this type and particularly during periods of unusually disturbed chemical and mechanical activity.

It would seem that the average successful, aggressive American business or professional man would fairly accurately represent the type of person who would seem especially liable to the syndromes which we have considered. The more successful and the more efficient he is, the more sure he is to possess those desirable qualities which we have been led to believe represent the cardinal demarcating and distinguishing features of the successful American. The rush and hurry and constant drive for supremacy, the ever-increasing competitive requirements, the effort to do and to make things with greater speed, greater efficiency, and in greater numbers, keep everyone associated with American business rushing to excel over his competitor. The constantly increasing momentum of speed, hurry, and efficiency has developed a nation which is having difficulty in keeping up with the established pace. We have become a nation of nervously and physically exhausted individuals. The worry, stress, and fatigue necessarily incident to all this struggle, the catastrophic behavior of the stock market, the economic depression, the futile efforts at graceful liquidation, the very struggle for existence, which includes that of an ever-increasing population, have certainly produced conditions which might be considered ideal for the development of different types of syndromes which might have their inception in derangement of the nervous system.

REPORT OF CASES

Case 1. A physician, aged fifty-two years, two years before registration at The Mayo Clinic began to have distress in the epigastrium from one to three hours after meals. This he described as a burning pain in the median line, just below the ensiform cartilage. Four months after onset of this trouble the appendix had been removed, in the vain hope that it might be responsible for the symptoms. At the time of his visit to the clinic he stated that his symptoms, although maintaining the characteristics previously described, had become somewhat more severe. Food and soda, which previously gave satisfactory relief, now were not fully efficacious in controlling the distress.

The patient was found to be of a very nervous, intensive, high-strung type, tall and slender, with the habitus so often seen in cases of peptic ulcer. The estimation of gastric acidity showed values of 84 for total and 70 for free hydrochloric acid; 75 cc. of the test meal was recovered. Roentgenograms of the stomach failed to show any abnormality. Careful exploration and direct inspection of the mucosa failed to reveal any evidence of gastric or duodenal ulceration. Because there seemed to be definite evidence of spasm of the pylorus, the anterior part of the pyloric sphincter was excised and gastroduodenostomy was performed. The patient has remained well since this operation.

Too often the appendix is blamed for various vague signs of indigestion, and it is assumed that its removal will be the short cut toward recovery. Although it is undoubtedly true that acute appendicitis may be productive of definite reflex gastro-intestinal disturbances, it is extremely unusual for chronic appendicitis to produce symptoms suggesting peptic ulcer. Rather than to hold chronic appendicitis responsible for such symptoms, it is best to carry the investigation further. In this instance the ulcer syndrome persisted following the appendectomy. At operation the only discoverable lesion was pylorospasm, which may have been responsible for the symptoms, or may equally well have been a result of the mechanism responsible for the syndrome.

Case 2. A man, aged forty-three years, stated that during the last seven or eight years, he had had heartburn an hour or so after heavy meals. The more he ate, the more prone he was to experience distress. At intervals he had epigastric pain in addition to the pyrosis. Taking soda would usually relieve this. Shortly before coming to the clinic he had found that induced vomiting gave relief. Estimation of gastric acidity showed values of 56 for total acidity and 42 for free hydrochloric acid; 300 cc. of the test meal was recovered. Roentgenograms disclosed deformity at the pylorus, and on surgical exploration a thickened, enlarged pylorus was found, which, on microscopic section, appeared to be the result of hypertrophy of muscle. The stomach was somewhat dilated, indicating that there had been definite obstruction. A Billroth number 2 type of operation was performed.

This case illustrates that not only can there be symptoms suggestive of peptic ulcer when ulcer is not present, but some of the complications, such as obstruction, can be satisfactorily reduplicated. The obstruction was due to marked hypertrophy of the pylorus, perhaps secondary to chronic spasm, and appeared not unlike the condition seen in congenital hypertrophic stenosis of infants.

Case 3. A woman, aged twenty-seven years, a physician of high tension and driving personality, had had heartburn since early childhood. For three years prior to her registration at the clinic, she had had an ulcer type of distress characterized by moderately severe, gnawing, nonradiating pain which was localized in a small area to the right of the epigastrium, and which occurred about forty-five minutes after eating The pain was relieved for a short time by food or soda. There was more prolonged relief from larger meals and coarse foods. The pain required the taking of food or alkalies repeatedly each night. The symptoms were incapacitating not because of their severity but because of their persistence. Emotional or psychic strain aggravated the trouble. Nausea was a frequent symptom immediately after the taking of food, but this could be controlled by belladonna. There was no vomiting, but the patient occasionally felt that food did not pass out of her stomach promptly. There was no history of gross bleeding, and no occult blood was found in the stools.

Tenderness or localized muscle spasm was not elicited on examination. Gastric acids were high, the total acidity being 74 and the free hydrochloric acid being 62. Repeated roentgenograms disclosed a rapidly emptying stomach without demonstrable lesion. On this account and because of failure to respond to a strict medical regimen, it was suspected that the condition was due to pylorospasm.

At operation hypertrophy and partial stenosis of the pylorus with thickening of the muscle of the antrum were found. The anterior segment of the pyloric muscle was excised, with closure as in gastroduodenostomy. The appendix had been removed many years previously. There was no improvement for eight months; then the distress progressively lessened.

The history in this case illustrates most of the features we have come to consider as characteristic of the ulcer syndrome without ulcer but with pylorospasm. The patient was of the high-strung temperament so often noted in cases of ulcer, and neurogenic factors were prominent in aggravating the trouble. The whole picture, so far as symptoms were concerned. was that of ulcer of a vicious type, but as contra-indications relief from food and alkali was too transient, improvement was not attained under careful hospital treatment, the element of periodicity was not present, there was no localized tenderness, blood was never detected in the stools, and the fluoroscopic examination was repeatedly negative. It is of interest that this patient's father has recently manifested almost identical symptoms, especially as to the influence of neurogenic factors in the aggravation of symptoms. In his case, however, duodenal ulcer was demonstrable in the roentgenogram.

CONCLUSIONS

1. There seems no doubt that the syndrome usually accepted as diagnostic of peptic ulcer can be produced by factors other than peptic ulcer.

2. The ulcer-like syndrome usually occurs in the nervous, high-strung, intensive individual and is particularly likely to be established during periods of fatigue and tension. Because of the fact that peptic ulcer also is frequently seen in cases similar to those described, because of the fact that reactivation of the ulcer frequently takes place following a period of stress, fatigue, and tension, and because fluctuating psychophysiologic factors seem capable of preventing the cessation of the ulcer syndrome, it is suggested that factors which have their inception in derangement of the nervous system must be significant in the cause and course of the ulcer type of syndrome, whether or not ulcer is present.

3. It is well to remember nervous factors in considering the treatment of patients having ulcer-like syndromes. In certain instances it is only necessary to readjust the patient's activities, to advise more rest and relaxation, to relieve the syndrome permanently. In cases of peptic ulcer, the remembrance of this same factor and the direction of some therapeutic measures toward relief make the symptoms much easier to control and undoubtedly favorably influence the course of the disease.

THE RESTORATION OF PARALYTIC DEFORMITIES AND DISABILITIES OF THE LOWER EXTREMITIES*

JOHN PRENTISS LORD, M. D., F. A. C. S.,
Omaha, Nebraska.

ABSTRACT

It is important that early recognition of conditions potential in the production of deformities be emphasized so that preventive measures may be instituted.

Physicians urged to continue their supervision beyond the acute stage; and parents educated and encouraged to seek orthopedic advice, before conditions of marked deformity and disability necessitate the more radical surgical measures.

Possibilities for relief in extreme cases, often considered hopeless. Elimination of braces and crutches. Restoration of ability to walk after years of creeping on "all fours" or sliding about the floor upon the buttocks and hands.

The results obtained justify the extensive surgery necessary.

* * * * * *

The daily experience of all orthopedic and reconstruction surgeons is that many of the cases come late. Some for various reasons have delayed seeking relief until their deformities have become most extreme, and their disabilities lamentable. These conditions from paralysis become progressively worse by lapse of time, while growth is constantly increasing and rendering more fixed and permanent the distortions, and increases the disability. The value of preventive orthopedic treatment is therefore constantly impressed upon us. Roughly estimating this phase of orthopedic practice, it may be safe to say that fully half or more of the treatment of the extreme cases, might well have been preventive. This means that the larger part of it must needs begin with the family physician and the pediatrician.

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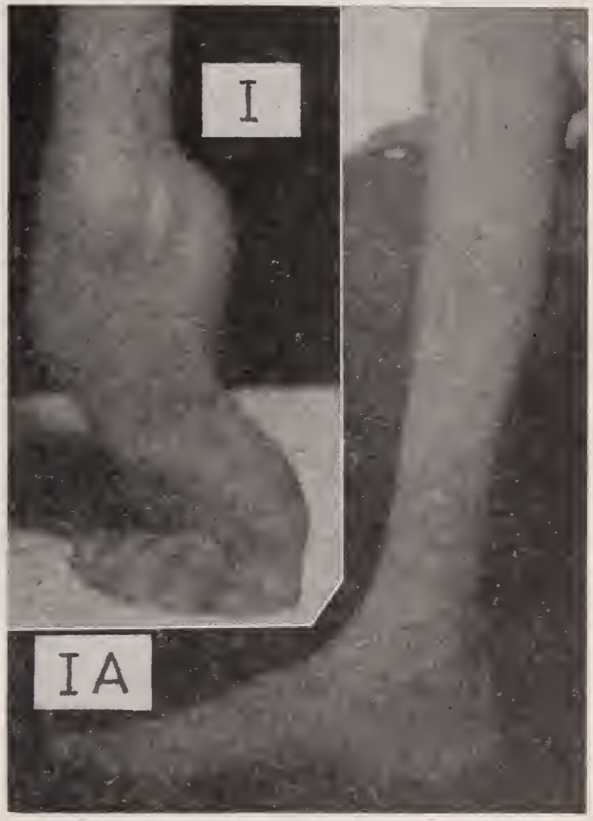
*Presented before the annual meeting Nebraska State Medical Association, Lincoln, May 24-26, 1932.

It is because of the years of needless delay, so frequently encountered in these cases, that emphasis upon the prevention phase of the subject would seem to be desirable and timely; and that its discussion may serve to bring these cases for surgical treatment earlier. And, while it is neither desired nor intended to make orthopedic or reconstruction surgeons of those here, yet it would be desirable that all practicing medicine should be so grounded in the knowledge of the baneful results of the continued altered mechanism of the human frame, as seen in infantile paralysis, that they could at least advise intelligently those seeking relief. The statement is made all too frequently by parents of the older cripples, that the reason for the years of delay in their treatment was that their doctors had told them that nothing could be done, because their trouble was due to paralysis. Perhaps some of this seeming failure of surgical understanding from the profession itself, is due to the patient's lack of discrimination or understanding of the doctors' terms. For instance, if the physician had said that the paralysis is incurable, the parents might understand that the case is hopeless, and thus misquote their doctor, who may not have said that surgical or other relief could not be had.

It would seem to be obvious that these more extreme deformities should have been prevented; or if established, that they be attacked earlier by the correction of the mal-alignment of the skeleton, and the extreme and extensive surgery avoided, as later becomes necessary to actually accomplish fully results in the delayed and neglected cases.

The early attention necessary to prevent the lesser degrees of skeletal mal-alignment, becoming the cause of major degrees of deformity, and disability would seem to be desirable to emphasize. It is probable however, that those most in need of this advice do not attend medical societies.

Any degree of varus or valgus, especially if due to paralysis, may require early and persistent attention to corrective measures to prevent deformity; but if these measures have failed and a proper operative age is attained for reconstruction; fixation, and muscle transference should be done to avoid continued brace wearing, and obtain the benefits of permanent correction. At least feet so stabilized, as to give the best possible function in permanently corrected positions. (Figs. I and I-A).

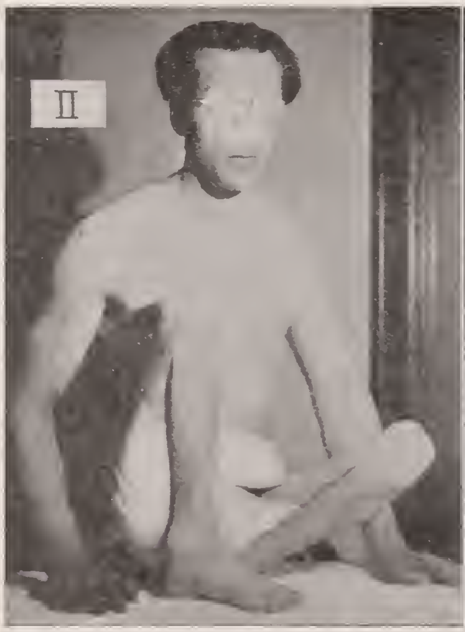


Flexion deformities at the knees are frequently the result of paralysis, and usually have varying degrees of contracture from slight to severe, the latter often-times with joint changes incident to growth during long periods of distortion, so called pathological dislocations of greater or less extent become developed. (Fig. II).

The lesser degrees of deformity may be overcome by the common forms of extension by successive corrective casts, splints, or special devices in the form of braces or apparatus. Extreme cases require operations best suited to their individual character. Extremely contracted knees and pathologically dislocated ones may have enough range of motion to be useful in a corrected position and should have some form of osteotomy, which will give a useful straight limb with good knee function of limited range. A frequent accompanying condition of knock-knee may be wholly overcome as well by the same supracondylar osteotomy. (Fig. II-A).

Cases of the most extreme flexion beyond a right angle usually require a considerable resection of the femur shaft, because the skeleton has become too long for the shortened soft parts, notwithstanding the lengthening of all flexor tendons, as was done in Figs. II-A-B.

Talipes equinus and cavus as well as talipes equinus varus of extreme types require complete separation of the plantar fascia from the os calcis; as in the Steindler procedure. In young patients, and some of those of older age with much atrophy, may be broken down and moulded by wrenching, but adolescents and adults with high arches require rather complete section of the tarsus. And many of the more extreme cases of cavus deformity require the removal of a wedge of bone—base upwards—of sufficient width to accommodate the bones to the shortened soft parts: the skeleton of the foot thereby shortened sufficiently to allow straightening, and lowering of the arch to the normal. (Figs. I and I-A). Cases of Cavus with calcaneous and an elongated or shortened achilles necessitate the correction of these conditions, and should be attended to in secondary procedures.



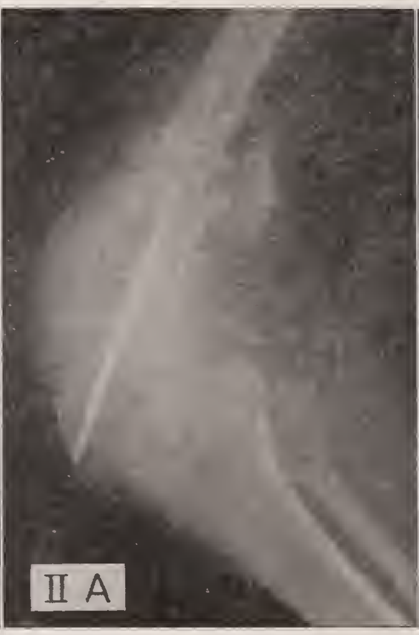


Fig. I represents a contracted heel cord in an equinus case which required plastic lengthening. Cases of varus or calcaneo valgus require their respective variations of treatment. Principles only are emphasized in this presentation.

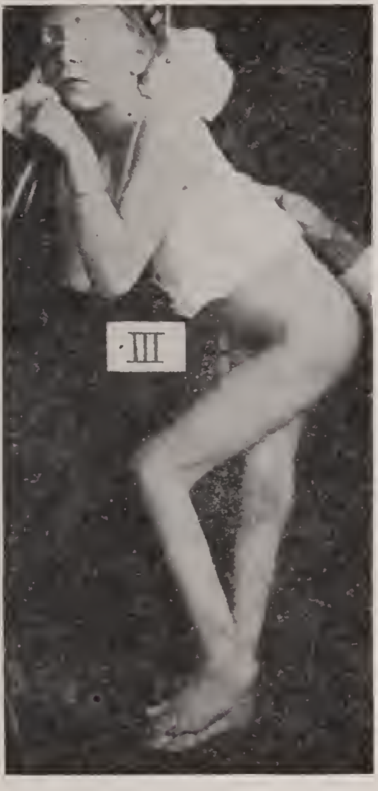
Complete and perfect correction of both alignment and rotation of crooked legs and feet is deemed essential in securing the best results, especially in the severe cases with but feeble muscle power. (Fig. V-A).

Knees corrected, and with established anatomic alignment; muscular stability is thereby increased, especially after the biceps is transferred to the paralyzed quadricips extensor, the function of which it assumes—there is secured a stable useful limb.

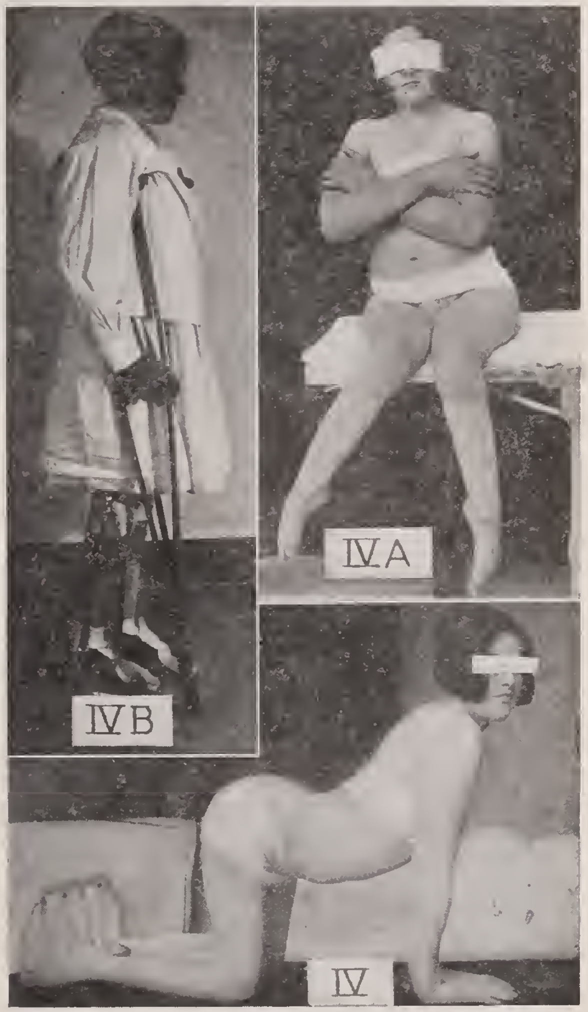
Feet deviated laterally, outward, or inward, from paralysis or poor statics, or from congenital deformity, should be so completely corrected as to be brought into normal alignment by mechanical or operative measures. The "modus" will vary so much, and its discussion will be so fraught with endless detail, of method, and technic, that but few phases can be considered in this presentation.

The feet in cases extreme in their deformity, or disability from paralysis, require some effective and permanent form of stabilization, as well as their restoration of alignment. Figs. V and V-A are the flail feet—examples requiring this fixation and permanent stabilization. The so-called pan-arthrodesis, with such excision of bones and joints as best suited to the correction of deformities and the establishment of a symmetrical foot, set backward upon the tibia, to place weight bearing farther forward, is an established measure, used in some form of its many variations by all reconstruction surgeons; especially to be mentioned are those who have originated the operations: Whitman, Hoke, Steindler, Dunn and many others. It being now the aim of all to so correct and stabilize deformity, that brace wearing is not permanently necessary.

Simple contractures of the thighs of lessor degrees originate from paralysis, or long exhausting illness. the body and thighs remaining flexed over a long period, produces lordosis when in the erect position, and stooping as well as interference with thigh extension. (Fig. III). This is best relieved by the division of the resisting muscles and fascie, at or near their origin, at the superior and inferior spines of the ilium. This section may be more or less free and sufficiently extensive to remove all resistance to full and complete hyperextension of the thighs. To fully affect this in extreme cases, section of the Y ligament and capsule of the hip joint is sometimes necessary; the forcible extreme extension of the high should then be secured in the over-corrected position, the body placed upon an elevated frame, with the limbs dependent, 45°, in plaste. In the more extreme cases with contractures of ninety or more degrees (Fig. II), the Soutter, Campbell or some procedure equally efficient and radical should be done to affect the full and complete hyperextension, so essential to one-hundred per cent results. To secure which it is sometimes necessary to "Out Soutter" Soutter by an extensive division of all resisting ligaments and muscles, including partial sections and separations of the ileopsoas group at their attachments, even more radically than previously described. The radical Soutter is an operation of enough severity that it should not be made bilateral in one procedure.


III

The case shown in Fig. V had these various operations upon the feet, knee, and hip. Figs. V-A and V-B, the same girl after the right leg, one and three-fourths inches longer, had been sufficiently shortened to correct a lateral curvature of the spine. Fig. V-B shows her standing and able to walk after 12 years on crutches.

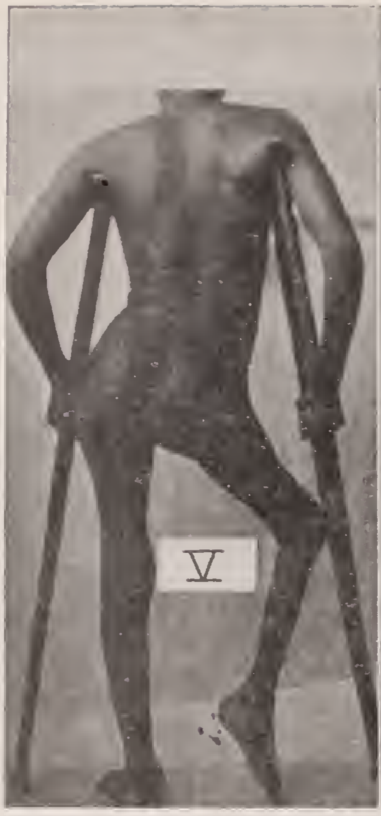

IVB

IVA

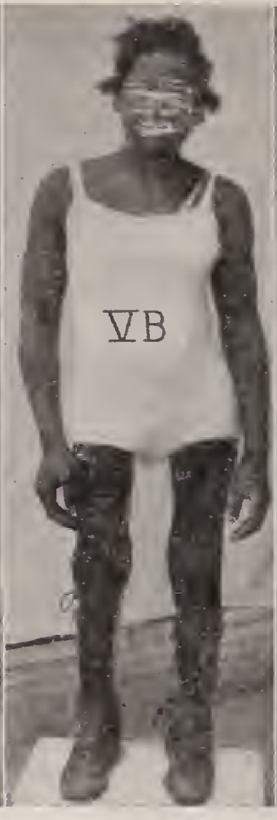
IV

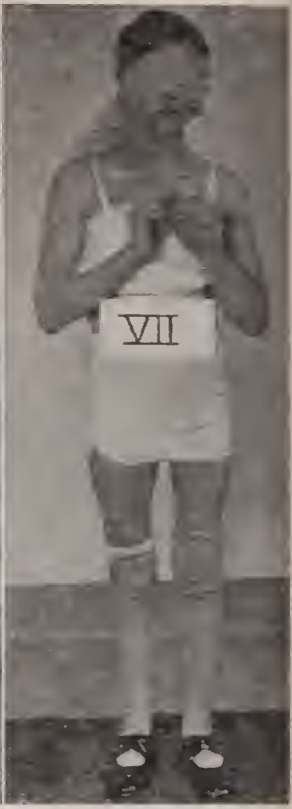
The cases of the quadrupeds as illustrated in Figs. II, IV-A, IV-B, VI-A and VI-B, and hopping about on their hauches, because of thigh contractures, are examples of the more extreme deformities and disabilities which have required the more extensive surgical measures.

This man of 24 years (Fig. II) had his paralysis at 1½ years, and had not walked thereafter until several operations.


V

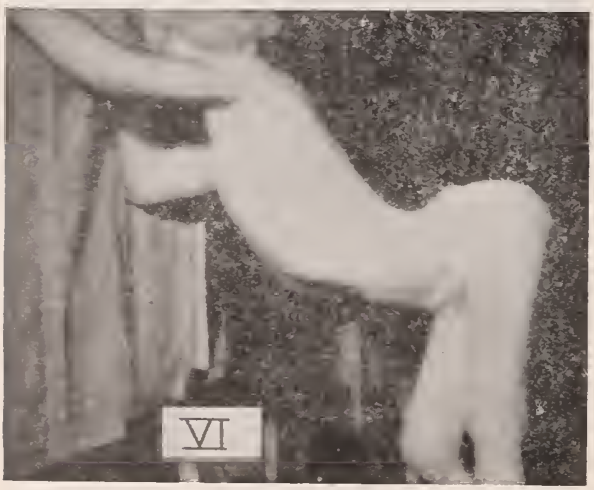
VA


VB


VII

The young woman upon her hands and knees had not walked for 12 years. Fig. IV-B shows her a few weeks after the operations.

Fig. VII is a young woman now restored, who had spent five years in bed, and was a quadruped. For many years she has used neither crutches nor braces.


VI

Case No. IV is one of Dr. R. D. Shrock's, kindly loaned for this presentation.

DISCUSSION

H. WINNETT ORR, (Lincoln): No one can testify to a proper basis for Dr. Lord's optimism in regard to the surgical treatment of these cases better than I can. I have seen him treat these patients for many years, and know how much he accomplishes for them. What he says in regard to delay in the patients' bringing infantile paralysis children for treatment is true. Some time ago I studied a series of one hundred consecutive cases of infantile paralysis coming to us for treatment and the time elapsed since the acute attack averaged five and one-half years. Some had seen specialists, and some had had brace treatment. The majority, however, came with the most pronounced pessimism as to the prospects of improvement. The parents nearly always come to us with a demand for brace treatment. It requires considerable explaining to convince them that the purpose of surgery is to make the same

VIA

VIB

kind of results as in brace treatment permanent, as Dr. Lord has described, instead of merely temporary.

One difficulty in convincing them that this treatment is desirable and effective is the fact that many have had ineffective braces. With some brace-making manufacturers the brace mechanism has been of such character that the braces soon acquire the same deformities as the patient. The rule should be in securing braces for these children, to see that they are so constructed that they actually fix and maintain the paralytic ankles and knees in correct position. Another difficulty encountered is the fact that parents often permit these children to wear the braces only when they like; to leave them off at certain periods during the day or night, so that the patients are not properly protected against either static of contracture deformities. If the brace treatment has been given early and carried out properly, then the prescription and application of such surgical care as Dr. Lord advocates is easier to accomplish.

Finally, it should be mentioned that it is a rule that either preceding or along with tendon plastic or bony joint stabilizing operations existing deformity should always be corrected by manipulation, by cast wearing, or otherwise.

I can only endorse most heartily Dr. Lord's suggestions, and congratulate him upon his good results.

DR. LORD, (closing): One of the pathetic experiences we sometimes witness is the fact that these patients, themselves, demand this treatment. The overly soft-hearted parents do not initiate it. It is only by the repeated suggestions and foresight of the children that they are brought for treatment.

This presentation is largely for the purpose of getting into our hands these patients at a time when less redical measures may be necessary.

PROGNOSIS IN SURGERY OF THE ABDOMEN: THE ACUTE APPENDIX

J. E. SUMMERS, M. D.,
Omaha, Nebraska.

Of almost no disease does the prognosis immediately depend upon the diagnosis. The diagnosis discloses the value of the disease much more than the proportionate value of the symptoms (Fiessinger).

To be able to interpret and acquire the prognostic value of symptoms is the most desirable accomplishment of the physician. To be able to fore-tell what can be accomplished and to carry this to a successful issue is the test of surgical wisdom and operative ability. This can only be acquired by the sense to recognize the urgency of the diagnosis, the patient's general condition, resistance, and the stage of the probable pathology.

The similarity of symptoms may be confusing and the urgency of surgical interference is more pressing in some abdominal affections than in others. It is in a study of the antecedent history and that of the present attack, with a comparison of the subjective and objective symptoms (the laboratory findings when available may be important), that a differential diagnosis or probable diagnosis is usually made.

The symptom of alarm demanding the urgency of action in any of the attacks of the acute abdomen, what Deaver called the "Dramatic Abdomen", is the *location* and *degree of rigidity of the abdominal muscles.* It is a reflex defensive action upon the part of the individual to control pain and limit the spread of any infection. A discussion as to whether the rigid abdominal wall is a reflex viscero-motor act (Mackenzie), comparable to the rigidity of the muscles surrounding an inflamed joint or a "contraction of vigilance" (Roux), a precaution against spontaneous pain or against the diffusion of infection (Mondor), is merely a question of speculation.

Of the different types of pathology which may cause acute abdominal pain accompanied by greater or less abdominal rigidity, that caused by appendicitis is the one which in the great majority of instances admits of the least urgency of prompt surgical interference—I am speaking of hours, not of days.

The pathological act which almost immediately is accompanied by an urgent symptom of alarm is the perforation of a hollow viscus, most frequently an ulcer of the duodenum, next often one of the stomach. Other perforations except those of complications, as of typhoid fever are practically all traumatic.

Mondor emphasizes the fact that there is no absolute clinical sign, always present, always early, and clear to be recognized of a beginning acute abdomen; but, in the first row of important symptoms of alarm the true contraction of the abdominal wall deserves the closest study. To me the ability to recognize the probable pathology behind it is of the greatest prognostic value.

The late Doctor Deaver, whose clinical experience in abdominal surgery, especially that of the appendix, has never been excelled, in one of his last writings* said: "Ranking the acute abdominal surgical catastrophes according to their intensity, that is, their fulminating character, at the head of the list would stand acute hemorrhagic pancreatitis, and mesenteric thrombosis, next in order being acute perforating peptic ulcer, acute intestinal obstruction, acute perforating cholecystitis, acute perforating appendicitis. But in the order of their frequency the last-named stands first. I have made it a teaching axiom, when confronted with an acute abdominal condition, think first, last and always of the appendix; and, when the patient has had a previous abdominal operation, to think first of intestinal obstruction. Among other surgical possibilities that must be thought of are ruptured ectopic pregnancy, acute diverticulitis, etc. Non-surgical conditions must also be borne in mind, notably incipient pneumonia—especially in children, angina pectoris, the gastric crisis of tabes dorsalis, hematogenous infection of the kidney, renal colic, pyelitis, etc.

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*The Southern Surgeon, Vol. 1, No. 1, April, 1932, pp. 12-15.

"Alhough appendicitis has been recognized as the most frequent cause of the acute abdomen for nearly half a century, its mortality remains high, mainly because of faulty diagnosis and consequent faulty treatment. Evidently the time to stop talking about acute appendicitis has not yet arrived."

I was rather startled recently in reading an article in the *New York Times,* with the following heading: "Appendicitis Toll Highest in America." "Dr. F. L. Hoffman, Statistician, Says Annual Death Rate Here is 18,000. Demands an Investigation. Thinks Medical Societies Should Inquire Why So Many Fatalities Occur After Operations."

The annual death rate from appendicitis in the United States at present is estimated at from 18,000 to 20,000 by Dr. Hoffman, in *The Spectator,* an insurance, publication. Dr. Hoffman says that the country's present death rate from this malady may be said to be the highest of any of the great civilized nations of the globe and calls for an investigation of the causes.

According to Dr. Hoffman, deaths from the disease has increased in relative frequency from 13.4 per 100,000 in 1920 to 15.2 in 1929. Figures for approximately sixty large American cities show an increase since 1910 from 13.3 to 18.1 deaths per 100,000.

Dr. Hoffman presents figures to show that the appendicitis death-rate for the United States is decidedly excessive. The rate for Prussia in 1925 was but 6.8. The Irish Free State showed a rate of but 5.2 in 1929. The rate in Scotland the same year was 10.0; New Zealand, 7.2, and Mexico City, 9.1. The lowest rate of all is returned for Italy, which for 1928 was only 3.7 per 100,000 .

The situation calls for a thorough inquiry, much along the same lines as the cancer problem is being studied in all its many perplexing aspects. Among thirty American cities with appendicitis death rates ranging from 30.1 to 59.0 deaths per 100,000, we find our own state represented by Lincoln having a death rate of 31.4. Dr. Hoffman continues to say: "It would certainly seem to be the duty of the local medical society to inquire into the facts explanatory of the local appendicitis death rate. If there is a lack of surgical skill in such communities the matter imperatively demands consideration, for it goes without saying that most of the deaths follow operations, since it is a safe assumption that three-fourths of the appendicitis cases find their way into hospitals for more skillful treatment."

By those who are informed, it is reasonably estimated that in Canada and the United States there are about 500,000 cases of appendicitis a year, and of these 5%, or 25,000, die. This rate equals "the combined death rate from ectopic pregnancy, pyosalpinx, gallstones, pancreas, spleen and the thyroid. It nearly equals the mortality rate from gastric and duodenal ulcer, intestinal obstruction, and gallstones." About one person dies of appendicitis each 25 minutes, in the United States and Canada. Having grown up professionally with the development of the recognition and treatment of appendicitis, and having done the earliest operation in Omaha (1888), and having operated upon and seen in consultation several thousand cases—an almost daily job, I feel that I am in a position to express an opinion upon the subject, and can perhaps recognize the why and wherefore of the increased mortality rate of today over that of ten or more years ago.

In *"Medical Insurance",* found upon the table of insurance companies, we note in an editorial, commenting upon "The Spectator" and its tabulations of high death rates of appendicitis in this country, that the editor makes some criticisms and suggestions, which I believe are apropos. He says, "We wish somebody would tell us what the matter really is. We have our ideas regarding the cause of so many deaths, but we hardly dare to express them. It has seemed to us that there has been too much surgery in many instances—that there has been untimely surgery in others.

"Without a doubt many deaths from appendicitis have been due to destructive rather than constructive surgery. Once in the belly many surgeons seem to think they must cover anything therein and that regardless of what may be injured or destroyed. This is particularly true in abscessed cases and whether or not the appendix has burst. Instead of going in and getting out of the abdomen in the least possible time and with the least possible disturbance of the contents thereof, as would be the case in the face of an abscess in any other location, many operators seem to think it necessary to make a complete cleanup. They may make a complete cleanup. but in addition they break down nature's barriers and as a consequence we hear of 'ascending peritonitis.'

"Years ago we made no effort to bring the appendix to view. Patients receiving such treatment seemed rarely to be bothered with the present day 'ascending peritonitis', and their recovery, if we may judge from their subsequent condition, with few if any recurrences or even discomforts postoperative. Today it seems imperative that the appendix be found and removed in every case of appendicitis, be it clean or purulent."

One of the latest expressions of opinion, based upon practical experience, will be found in the Proceedings of the Staff Meetings of the Mayo Clinic, June 1, 1932. In the last four and one-half years Dr. C. F. Dixon, Division of Surgery at Rochester, has operated upon 523 cases of different types of acute appendicitis. He says: "Many reasons have been given for the increase of deaths from appendicitis. Perhaps within the last ten or twelve years more patients with appendicitis have been operated upon by the occasional operator, and perhaps the present generation of younger surgeons has not taken seriously the wide experience of the older surgeons in this field. The inference should not be drawn, however, that the increase in the mortality of appendicitis is due entirely to the medical profession. It seems to be a common household custom to administer drastic cathartics at the onset of every abdominal disorder. It was once the belief of certain physicians that cathartics should be given in cases of appendicitis and if possible early in the attack. We now know this is detrimental to the safety of the patient. Ochsner was one of the first to emphasize immediate operation in acute appendicitis provided the condition was not of too long duration. He pointed out that the mortality was very low if the operation was carried out within the first twenty-four to thirty-six hours; that it was increased quite markedly at the end of seventy-two hours, and that it was extremely high after ninety-six hours."

Doctors know, now-a-days that, when the circumstances admit every case of acute appendicitis should be operated upon within the first forty-eight hours of the attack—the earlier the better. After forty-eight hours we pass into the second stage of acute appendicitis, the picture usually changes, as Murphy put it: "Should we operate in the second stage, during the increasing or spreading inflammatory process, which may mean anywhere from the second to the fifth day?" He proceeds to explain: "In this stage we may have the circumscribed abscess around the appendix, an active inflammatory process of the neighboring tissue or organs, or the early pathologic changes of a circumscribed or general peritonitis. We often find the temperature and pulse high, meteorismus, intestinal paralysis, and acutely infected tissues, with manifestations of severe intoxication at this stage. These patients will not stand extensive manipulations. They are already fully burdened with the toxins, and this intoxication must not be increased or the patient will be sacrificed. Shall we operate? Yes; but the operation must be a limited one; that is, simple opening of abscess and relief of pus tension in the infected area with the removal of the appendix, if it be accessible and easily amputated."

Usually I let the appendix alone, but I sometimes do a complementary enterostomy. I do this also in the diffuse type of the disease provided the general condition of the patient admits of any hopeful procedure. The incision should be a free one, so as to see as well as to feel, either through the long axis of the rectus or more or less obliquely through all the muscles over the appendix area. When the abscess presents in the iliac region, the most common direction, it may often be opened and drained by a Willard Parker incision without opening the peritoneal cavity. In a well walled off abscess, the appendix not readily recognizable, I let it alone. In only 25 per cent of such cases, in my experience, is later removal of the appendix required.

I do not drain in instances where the appendix has not ruptured, although there may be a rather turbid fluid exudate present. Deaver regulated this by, in every case, taking smears to determine the presence or absence of active germs. A wise procedure when available. I urge its adoption. I often see smears and fluid taken for cultures but the result is only known days later on the history sheet.

The question of how to drain is important, to simply place a rubber drainage tube or Penrose drain in the center of the infected area and not protect the contaminated area around about is a mistake, especially if the perforated, more or less gangrenous appendix has been removed.

After opening the abdomen in an abscess case, the first thing to do is to pack gauze pads around about so as to completely separate the abscess from the general peritoneal cavity. To do this properly the abdominal wall must be elevated by long-bladed retractors. After opening the abscess, removing the appendix or not, the dependent portion of the abscess is drained with a rubber tube or Penrose drain and the whole area of the surfaces contaminated drained by gauze wicks—preferably enveloped in a piece of rubber dam—a Mikulicz drain if you will. If you have good reason to suspect that there is pus in the pelvis, pass a small piece of gauze in a long-handled sponge holder, into the pelvis. If pus is found aspirate it out or sponge it out and introduce a good sized, non-perforated rubber drain, which in the after-treatment should be aspirated frequently. If any but the smallest amount of drainage is anticipated, the wound should not be sutured but temporarily closed only in part by towel hooks, to be sutured at a later date.

The use of towel hooks for the temporary emergency closure of wounds is a valuable technique in amputations, or any wounds, in fact, where there is shock especially that of hemorrhage —I have used it for years. It has been a common practice with me when necessary amputations were done upon patients in bad physical condition to remove the limb quickly, tie the main vessels, perhaps leave clamps upon several. The flaps are brought together by several towel hooks, the stump enveloped in gauze and bandaged. After several days when reaction has been established the clamps are removed, towel hooks taken off and flaps sutured. To do the modern fashionable orthopedic amputation in such instances is puerile. As an example in serious abdominal operations, especially where there has been much hemorrhage as in a neglected ruptured ectopic pregnancy, I clamp off the offending tube and remove it—in some instances do not attempt to sponge out the blood. Leave the clamp or clamps hang out the lower angle of the wound and close the wound with towel hooks. I have recently reported several severely shocked abdominal cases, among them a case of ruptured tubal pregnancy where a fatal termination seemed imminent: rapid feeble pulse, no second heart sound, blood pressure not registerable. Normet's Solution was given, the abdomen opened under local anaesthesia, clamps applied, the tube removed, no sponging out of blood, the worst hemorrhage I had ever seen in more than one hundred operations for ectopic pregnancy. The clamps were allowed to remain, and the wound brought together by towel hooks. In such an instance, as in similar emergencies, I am in the habit of allowing the clamps to remain seventy-two hours, they and the hooks are then removed and the wound closed by suture or heavy adhesive plaster.

Do not remove the gauze pads protecting the peritoneal cavity until after the drainage is established. Let me give you some proofs of the value of this technique. Early last year, in March, Pierre Duval, the distinguished French surgeon, wrote some of his reflections upon 752 cases of acute appendicitis in adults, operated upon as emergencies. His drainage methods were carried out with rubber tubes, he advised against the Mikulicz drain. In the April following, M. J. L. Faure, an equally distinguished French surgeon, gave his results in a similarly large number of cases. Their results were about the same in all early operations but in cases where it was considered necessary to drain, the startlingly more favorable results in Faure's cases where he used Mikulicz drain over those of Duval's where rubber tubes were used, and the Mikulciz advised against, is striking. These papers were read before the French Surgical Society and published in their Bulletin.

The ability to diagnose appendicitis has been assumed but I want to call attention to three important signs, not generally known or appreciated, as they have so much to do with the prognosis. (1) Dixon (Mayo Clinic) says: "A recent advance in the diagnosis of gangrenous appendicitis is the result of the Brittain sign, as mentioned by LaRoque. Brittain, an intern in the Richmond Memorial Hospital, in 1928 observed that in gangreous appendicitis of male patients, pressure over the lower right abdominal quadrant caused contraction of the cremaster muscle, drawing the testis into the upper portion of the scrotum. When the pressure was released, the testis resumed its normal position. LaRoque stated that this sign was positive in 500 cases of gangrenous appendicitis and that in 300 other acute abdominal conditions, its presence was not noted when pressure was made on any portion of the abdomen. I agree with LaRoque and Brittain that this sign is pathognomonic of a gangreous appendix in a high percentage of cases." (2) (Erdmann's Clinics): "Pain in the left lower quadrant with evident tenderness, pain, and resistance in the right quadrant (appendicitis in other words) and without any marked evidence of abdominal distention, signifies free fluid in the pelvic cavity, varying in character from serous to a sero-purulent or purulent, although the appendix, and abscess if present, is thoroughly walled off. I do not recall misjudging this diagnostic factor in a single case for decades, and in making such a statement I do not refer to the ordinary amount of peritoneal fluid one usually finds in the pelvis, but a quantity in such excess as to be measurable in ounces. Naturally the early recognition of this symptom, which is an early indicator of general peritonitis, aids us in our prognosis and gives us more definite reason for demanding emergency operative interference. (3) In children, particularly the very young, they generally ward off the examining hand. Almost invariably the little patients unconsciously place their hands in the region of the appendix to ward off manipulation in this region."

To regain the confidence of the public which is being shaken—people believe the insurance companies' reports—we must insist upon the early operation. Do the later procedure at the opportune time and do this operation with better judgment as to technique.

I am a firm believer in the so-called Ochsner preoperative and postoperative treatment, and in the real Fowler position. There has been untimely surgery. There has been too much surgery. Prognosis in appendicitis will begin to improve as we better train our internes, and the laws are amended so that something more than the M. D. diploma is the disguise under which anyone may legally practice a specialty.

(To be continued).

DISEASES OF THE THYROID GLAND*

BYRON B. DAVIS, M. D.,
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IN THREE PARTS.

Part III—Concluded

TREATMENT OF THE VARIOUS TYPES OF GOITER

It is well to consider each type by itself. The non-toxic cases are to be treated quite differently from the toxic cases and there are a number of points of management of the toxic nodular goiters which should differ from that of toxic diffuse goiter.

Non-toxic Diffuse Goiter. The use of iodine as a preventative of this type of goiter has been used long enough and extensively enough to prove its value. When the iodine ingestion by means of food and drink is insufficient a little iodine in times of stress will nicely tide the case over and avert the threatened advent of goiter. Although this type is pre-eminently an iodine deficiency disease some other element such as undue mental, emotional or physical strain or the advent of the menstrual function seems to be necessary in order to inaugurate the hypertrophy and hyperplasia. If it were due entirely to iodine deficiency it would attack males and females in equal numbers, instead of 10 to 15 females to one male.

When the disease is established two things are needful: (1) The use of iodine; (2) a halt should be called to the overwork, or worry or whatever seems to be the exciting factor. In females, when the menstrual cycle is a disturbing influence, two or three 5 minim doses of Lugol's solution during each menstrual period gives almost certain assurance against an exacerbation of the trouble.

The patient always asks if this treatment is going to cure the goiter already formed. Although many goiters recede to a size which renders them unnoticeable many fail to do so, but most will decrease somewhat in size, depending on how promptly treatment is begun and how systematically it is carried out.

An important question in this connection is whether these cases should ever be treated surgically. In general it is agreed that non-toxic diffuse, or endemic goiter, should never be regarded as a surgical disease except under exceptional conditions.

Great size of the gland, sufficient to make it a burden and very unsightly, is a good reason for its removal. Sometimes the patient is very anxious for its removal for cosmetic reasons. In cases of this kind to operate or not to operate is a matter of conscience or expediency. As a rule it is easy to convince the patient that the operation is unnecessary but if its removal is still demanded I see no good reason for refusal, especially when one realizes that the mortality in such cases ought to be less than one-half of one per cent.

There is another condition which is rarely met with when the goiter presses upon the trachea and impedes respiration or when the function of the recurrent nerve is interfered with producing huskiness of the voice or cough to such an extent as to make removal imperative. It may be said that 19 cases out of 20 of non-toxic diffuse goiter should not be operated upon.

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Toxic Diffuse Goiter. Every case of toxic diffuse goiter, or what we have been accustomed to call "Exophthalmic Goiter" should be treated by subtotal thyroidectomy. It is not an operation of expediency but of necessity. Many of these patients will perish unless their goiters are removed. It should be regarded as a strictly surgical condition. It is true that occasionally enough fibrosis develops so that a case of this type becomes self-curative, but most of them will result fatally if operation is not performed.

Such operations ought never to be undertaken without the most painstaking pre-operative preparation, the details of which will be discussed later. Should a case present itself during an acute attack of hyperthyroidism, large doses of Lugol's solution, 10 minims or even 15 minims three to eight times daily, with ice over the neck and prae-cordial region, and sometimes the whole body packed in ice, as in heatstroke, will usually carry a patient over the attack. Operation must never be considered during an attack.

Non-Toxic Nodular Goiter. It is my mature opinion that every case of non-toxic nodular goiter should have thyroidectomy performed for the following reasons: Sooner or later almost all non-toxic nodular goiters will become toxic. The mortality of toxic nodular goiter is much higher than of toxic diffuse goiter. The reason for this is that the onset of toxicity in nodular goiter is much more insidious and as a rule the heart has been badly worn out before operation. Besides these patients are much older than those with toxic diffuse goiter and they are much poorer surgical risks. Many of them already have high blood pressure, arterio-sclerosis, poor kidney function, and are more likely to have various other complications which make operation extra-hazardous.

Plummer says that nodular goiters are surgical conditions and reminds us of the insidious onset of toxicity which enhances the danger. He further asserts that pressure symptoms may develop so gradually that the patient is not conscious of them; and deferring operation in these cases is not justifiable.

It is claimed that 87 per cent of the malignancies of the thyroid arise in nodular goiters, and about the only cures of carcinoma of the thyroid gland are those operated upon before malignancy is suspected. Rienhoff thinks all cases of nodular goiter in patients over 25 years of age should be treated surgically. He gives as an important reason for this opinion that the only successful results thus far following operations for carcinoma have been in those cases removed so early that diagnosis for malignancy had not been made. A nodular goiter which is increasing in size always suggests malignancy.

Toxic Nodular Goiters. The treatment of these cases is as truly a surgical problem as the cases of toxic diffuse goiter. As has been already stated the operative mortality is higher and this has been given as an important reason for removing them before toxicity has begun.

Before deciding upon operation it is very necessary that the condition of every organ of the body should be determined. Careful functional tests of the kidney should never be omitted. The condition of the arterial system should be known. The heart should not only be ausculated and percussed but, to make assurance doubly sure, cardiographic tracing ought to be made. If the patient is a diabetic as sometimes happens the condition should be treated by insulin and proper diet and a fair degree of sugar tolerance established. Further than this the pre-operative care is much the same as for any case of thyrotoxicosis.

PRE-OPERATIVE TREATMENT

The pre-operative treatment of non-toxic goiter is essentially the same as for any other operation of equal magniture. Much fluid pre-operatively to guard against dehydration, careful regard for the condition of the alimentry tract and especially selecting a time when there is no acute upper respiratory infection are the main features to be stressed.

To properly prepare a patient with a toxic thyroid for operation has become a fine art. If I were a victim of hyperthyroidism I would rather put myself into the hands of a surgeon who is expert and painstaking in preparing his patients, even though his operative technique is crude, than into the hands of the most dextrous operator if he is indifferent or careless about the pre-operative care.

In discussing the preparation of toxic goiter patients for operation I prefer to include all types of hyperthyroidism together because pathologically they are identical. It has been my observation that all respond alike to Lugol's solution, the response being more rapid and more favorable in those most acute and in those who have had the least amount of previous iodine medication.

Suppose a case has been diagnosed as a toxic goiter, diffuse or nodular, as the case may be. A complete history is taken, with special care to ascertain the mode of onset and what, if any, physical, mental or emotional burdens may have preceded or accompanied the onset of the symptoms. If possible, it should be ascertained in what order the symptoms developed.

The physical examination should be comprehensive and include a searching investigation of the entire body. This should include the lungs and heart. Electro-cardiograms should be made if arrhythmias exist. A careful differential blood count is very important; also a urinary analysis and, if the patient is past forty in every case, and in all serious cases whatever the age, a kidney functional test is important. If the kidney function is low, a non-protein nitrogen test is advisable. It is well to make two or more blood pressure tests, the most important factor in this test is the pulse pressure. I am convinced a very high pulse pressure adds to the gravity of the case. Oto-laryngological examinations are important; one should know definitely before operation whether the recurrent laryngeal nerves are intact. This is important for the surgeon's protection and, if these nerves are in any way involved, it calls for especial care in avoiding any traumatism of them during the operation. An x-ray of the chest will determine, (1) whether there is any latent or active tubercular process going on and, (2) whether any part of the thyroid growth has become intra-thoracic. In females a pelvic examination should never be omitted.

As the conclusion of these preliminary examinations the patient is put to bed in a quiet room. The nurse in charge should be quiet and reassuring. The toxic thyroid patients are more susceptible to trivial psychological disturbances than any class of cases with whom I have ever had to deal. Some surgeons make it a rule not to admit visitors during the days of preparation. I believe this is usually a mistake. Isolated in a room in a hospital with no familiar faces, nothing is more likely than that apprehensions and forebodings will upset her morale and defeat the objects of the rest treatment. What can be more reassuring than brief visits from cheerful members of the family and close friends? Much tact is necessary to exclude visitors who are nervous or excitable or who bring into the sick-room any message but that of cheerfulness. When visitors are admitted there must not be too many of them and their calls must be brief.

The diet should be liberal. It should be high in carbohydrates, very low in proteins and the daily intake suggested would be in the neighborhood of 5,000 calories. There should be no tea, coffee, cocoa or tobacco, but large quantities of water and some glucose, the amount of glucose increasing as the time of operation approaches; sometimes this should be given intra-venously the two or three days preceding operation. Ice bags are applied to the praecordial region and to the neck. Lugol's solution is given in 10 minim doses three or four times daily. By mixing it in two or three ounces of orange juice it will be more palatable and will not irritate the gastro-intestinal canal.

Checking up on the metabolic rate is done every three or four days. As a rule in two or three days after beginning this treatment the patient becomes less excitable. she begins to sleep better, the tremor is less, the eyes less staring and a feeling of well being takes the place of the restlessness and constant physical and mental activity. At the same time the basal metabolic rate is falling. It has been my observation that the improvement in objective symptoms and the fall in basal metabolic rate follow parallel lines.

In 90 per cent of cases the above treatment is followed by definite improvement and the patient in ten to fourteen days or, at the least, three weeks, can be put into a favorable condition for thyroidectomy; but there is an occasional case which does not improve. The failure to respond may be due to a psychological state too disturbing to be easily reached, an unusual degree of hyperthyroidism, an extreme chronicity of the condition or to the fact that so much iodine has been given previously that a tolerance has been built up.

If there is no improvement within a week a thorough review of the entire situation will probably elicit some reason for the lack of response. The use of bromides may quiet the nervous system and be of benefit. Putting the body in an ice pack such as is used in heat-stroke may be advantageous. Perhaps it may be discovered that one of the visitors has a disturbing influence. There may be a gastro-intestinal upset. The nurse may irritate the patient; even the best nurse in the world may be personally objectionable to some persons; and lastly and more important great benefit may result by doubling the dose of iodine.

How is one to determine when the best time for operation has arrived? Much depends on selecting the exact time when the acme of improvement has been reached and before the inevitable reversion to the old state begins. It has been discovered that rarely can this preparatory treatment keep up a continuous improvement for more than three weeks. A tolerance of the iodine will have been acquired, the natural patience of the sick one will have been exhausted, the hopefulness and cheerfulness and expectation of a speedy cure will give way to a feeling of despondency and there will be an inevitable loss of ground and the surgeon may wake up to the fact that he did not bat the ball until it was past him.

Suppose the original basal metabolic rate was plus 70 or plus 80 and it falls successively to plus 60, plus 45, plus 40 and gets say to a plus 33. At the same time all the subjective symptoms have been improving. The patient says she feels like another person and looks the part. Then is the time to strike, for the minute the basal metabolic rate begins to increase the surgical risk becomes greater. I would rather operate with the basal metabolic rate at plus 50 and falling than at plus 30 when rising. It has been shown over and over again that patients withstand operation much better on a falling basal metabolic rate than on a rising rate.

The above mode of preparation applies to the typical cases, and is well understood by all who treat many thyroid cases. There is one complication frequently met which keeps all of us on the anxious seat; that is, when coincidental with thyrotoxicosis, there is decompensation with a true heart lesion. The auricular fibrillations resulting from the hyperthyroidism when the heart is otherwise sound are, as a rule, comparatively easy to deal with. The ordinary pre-operative rest and care with the use of Lugol's solution will often cause fibrillations to cease. If not, the use of quinidine is usually effective. But even if the fibrillation continues, there is not much additional risk in thyroidectomy, providng there is no cardiac decompensation. The use of digitalis for a thyroid heart with fibrillation and without decompensation is both useless and harmful.

On the other hand there are a good many cases of true heart lesions associated with hyperthyroidism, and I believe the hearts in such cases should be treated exactly as we would treat them if no hyperthyroidism existed. It must further be said that when a true heart lesion exists, it is much more apt to become decompensated because of the hyperthyroidism. This would naturally be expected. The rapidity of the heart due to a toxic thyroid has the same effect that too violent exercise would have and consequently decompensation is not surprising. It may be considered a rule then that when a patient with an organic heart lesion falls a victim to thyroxicosis cardiac decompensation will sooner or later result.

For this condition complete digitalization is the logical treatment until the decompensation has been completely overcome. This is the fitting time for thyroidectomy whether fibrillation persists or not. The rule laid down by Ruddock and Toland not to give quinidine until after the digitalization has relieved the decompensation is absolutely sound. My own preference is to relieve the decompensation by the use of digitalis, stop the digitalis and wait three or four days to observe if the relief is permanent and then perform thyroidectomy. The use of quinidine is more needed and it works more effectively if administered the first few days after the operation than before. But it is well to remember, if there is no fibrillation, no quinidine should be given.

I shall not prolong this paper by any especial detail about the manner of doing thyroidectomy. It is merely a matter of technique. Nor do I share the views of those who stress so eloquently what anaesthetic should be used. It does not much matter, providing it is done carefully and the patient is not excited. Most of my patients receive a preliminary hypodermic of morphine forty-five to sixty minutes before being taken to the operating room. They then have a very light gas anaesthesia and an instillation of novocaine, without adrenalin. The operation is then carried out as expeditiously as is consistent with complete hemostasis.

Immediately following operation the continuation of abundant fluids subcutaneously, intravenously or per oram is important. A continued use of Lugol's solution the first few days after operation is life saving. If auricular fibrillation is present quinidine should be used. For pain and restlessness morphia is the best drug.

Since the systematic use of Lugol's solution as a preparation for operation and the carefully carried out treatment which goes with it, the avoidance of operation where there are any acute manifestations, and a better management of the heart complications the mortality for thyroidectomy has become almost nil. For toxic diffuse goiters anyone doing a large number of these operations, if his mortality exceeds one per cent he has been either unfortunate in the class of cases that have come to him or he should revise his technique. If all non-toxic nodular goiters could be operated before toxicity occurs it would save many lives.

END RESULTS

It is with regret that one must admit that a little less than 100 per cent perfect results must be expected in the toxic cases. There is always a fly in the ointment. Theoretically all cases without complicating organic disease outside the thyroid should be cured by thyroidectomy, providing the operation is done early and the exactly right amount of thyroid gland is removed. It is Straus' opinion that "the degree of hyperthyroidism does not influence the end-results, but that the degree of cure is inversely proportional to the duration of the disease."

When a heart has been working to full capacity, perhaps contracting 50 to 100 per cent more frequently than nature intended it to beat over a period of several years, with the hypertrophy which naturally follows such athletic exercise, it is hard to conceive that heart ever becoming quite the same it would have been without this overwork.

Lahey has a different opinion. He asserts that auricular fibrillation and decompensation due to hyperthyroidism alone does not produce myocardial changes. He says: "The possibility of restoration of cardiac capacity after removal of associated thyroidism in thyrotoxicosis is extraordinary. We have observed after operation a large number of patients who, without previous heart damage, have suffered the effects of hyperthyroidism over long periods of time and in whom relief of hyperthyroidism with restoration of the cardiac rate to normal range has resulted in a heart which is as capable as one which has never been subjected to the effects of hyperthyroidism."

That is an exceedingly comforting statement and without doubt represents exactly Dr. Lahey's observation and I have made the same observation. Yet, in spite of the perfect recovery of these patients. if you will visualize patients who have passed through the severe ordeal described, having a severe siege of pneumonia long drawn out with its attendant heart strain, or being subjected to a long period of extraordinarily severe physical labor, or after 20, 30 or 40 years when old age is upon them; can you imagine these patients to be in a position to cope with these burdens as well as if they had never been subjected to the cardiac strain of hyperthyroidism? This is not being unduly pessimistic but merely sensible. For all ordinary requirements their hearts are in good condition but for extraordinary calls upon their reserves these patients are not 100 per cent ready. This is another argument in favor of operation before the heart has been unduly worked.

Every hyperthyroid patient who has an organic heart lesion can be relieved of his hyperthyroidism but the organic disease of his heart remains, and I can scarcely conceive that the crippled heart is quite as fit to carry on as if there had been no hyperthyroidism.

Nevertheless the end results in the cases operated early with no long continued wear and tear on the heart will be practically as fit to carry on after thyroidectomy as they would have been if there had been no toxic goiter.

SUMMARY

1. Scientific knowledge of the thyroid came slowly. It took the surgeon and physiologist combined to unravel the problem. The surgeon is an iconoclast. When he begins to treat an organ surgically he discovers that the previous physiological conclusions are inconsistent with the facts; and little by little the physiologist aided by the surgeon come nearer the truth.

2. The best brief statement of the physiology of the thyroid I have encountered is that of Marine. It is as follows: "The major function of the thyroid is to provide the means through its iodine containing hormone, thyroxin, for maintaining a higher rate of metabolism or oxidation processes than would otherwise exist, and also through fluctuations of activity, it provides the means for varying the rate of metabolism to meet changing physiological needs."

3. Whatever the conditions which bring it about almost every pathological change in the thyroid is produced by an urge for more thyroxin. This may be due to an actual or relative iodine deficiency.

4. Hypertrophy and hyperplasia are not due to multiplication of follicles but to the bringing to maturity of a large number of small undeveloped follicles.

5. Every active hyperplasia is marked by the disappearance of colloid within the follicles and a heaping up of new and larger epithelial cells within the follicle.

6. Hyperthyroidism cannot exist without hypertrophy and hyperplasia.

7. Most nodular goiters are the result of the formation of involutional bodies formed by the contraction of fibrous tissue and catching follicles within its meshes.

8. There is no such thing as fetal adenoma.

9. The pathology of toxic nodular goiters and of toxic diffuse goiters are identical,—hypertrophy and hyperplasia.

10. If at the time of a special mental, emotional or physical stress sufficiently severe that ordinarily goiter would develop enough iodine is administered, it will prevent the goiter.

11. There is no medical cure for hyperthyroidism, it is wholly surgical. The lowest mortality is obtained when thyroidectomy is done early and before tolerance to iodine has been reached by its previous administration.

12. The man who attempts to treat toxic goiter without resort to surgery assumes a heavy responsibility. By administering Lugol's solution or other iodine preparation improvement occurs, but that it will be only temporary is 100 per cent certain. Never again can a patient be gotten into a condition when operation can be done as safely as during the first treatment. Therefore I submit the question to you, can any doctor afford to jeopardize the life of his patient by securing temporary amelioration of symptoms at the expense of a future added mortality?

PURPURAS

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IN TWO PARTS—PART I

CLASSIFICATION

A. THROMBOPENIC (THROMBOCYTOPENIC) Associated with Platelet deficiency. Due to Injury to the Platelet-generating cells of the bone marrow. (CENTRAL)	1. PRIMARY OR ESSENTIAL of unknown causation. (APLASTIC ANEMIA) 2. SECONDARY OR SYMPTOMATIC caused by a. Toxins of septic processes: Malignant endocarditis. Miliary Tuberculosis. Typhoid Fever. Small Pox, etc. b. Chemical Toxins: Benzol. Arsenic (Salvarsan), etc. c. Radio-Active Substances: Radium. X-ray. Thorium. d. Cellular Infiltration or Irritation: Leukemias. Tumor Cells.
B. NON-THROMBOPENIC Associated with defect or alteration in the vascular walls. Sometimes due to Injury to the capillary endothelium. (PERIPHERAL)	1. ANAPHYLACTOID OR ALLERGIC PURPURA: Allergic Dermatologic Lesions, Schonlein-Henoch's Purpura. 2. IN ASSOCIATION WITH INFECTIONS: Subacute Bacterial Endocarditis, Meningococcic Meningitis, etc.

Purpura is a condition associated with spontaneous bleeding from one or more mucous membranes, or within the skin; sometimes both. In rare types spontaneous bleeding from internal organs occurs.

Purpuras associated with platelet deficiency, or thrombopenic purpuras, make up the most important subdivision and will be considered first. The physiological importance of the blood platelets in clot formation is now an established fact. Thrombopenic purpura is a condition associated with platelet deficiency presumably due to injury to the thrombopoietic tissue. The platelet deficiency in the circulating blood is a recognized finding, while the injury to the platelet-generating tissue is an accepted assumption. Based on the platelet deficiency, there are associated findings, such as prolonged bleeding time and imperfect clot-formation. The clotting time in vitro is generally normal.

All the thrombopenic purpuras are divided into (1) essential or primary, those of unknown causation; and (2) symptomatic, or secondary to some known cause.

According to our present knowledge, the platelets originate from the giant cells of the bone marrow, the megakaryocytes. The other important elements of the bone marrow are the hemoblasts—the progenitors of the red blood cells, and the myeloblasts—the mother cells of the granulocytic (polymorphonuclear) cells of the blood. In the thrombopenic purpuras, essential or symptomatic, the megakaryocytes are supposed to be affected in such a manner that they fail to produce the required number of platelets for the blood stream.

Whatever the nature of the injurious agents responsible for the depressed platelet-formation, the megakaryocytes alone are affected in the pure forms of essential and in some varieties of symptomatic thrombopenic purpura. This selective affinity for the megakaryocyte, however, gives way in some instances to a generalized involvement of the bone marrow; consequently, the red cells and the granulocytic leucocytes of the blood suffer along with the platelets. We denote such a condition as aplasia of the bone marrow, indicating that the entire cell-forming activity of the marrow is depressed. The clinical syndrome accompanying bone marrow aplasia is known as aplastic anemia. In aplastic anemia the patient suffers not only from purpuric manifestations, due to platelet deficiency, but also from a profound anemia, due to lack of red-cell regeneration, and high degree leucopenia (or, to be more exact, granulocytopenia) with accompanying loss of resistance to infection. Aplastic anemia cannot be separated from thrombopenic purpuras because it is one of them. Since the nature of the injurious agents responsible for aplastic anemia is also obscure, it would be logical to group it with the essential form of thrombopenic purpura, though most of the texts favor its grouping with the symptomatic varieties.

Coming back to the first affection. Essential thrombopenic or thrombocytopenic purpura, or Werlhof's disease is a condition most commonly seen in young adults; it is characterized by spontaneous hemorrhages from mucous surfaces, purpuric skin lesions and, occasionally, hemorrhages within internal organs. The chief characteristic is the occurrance of hemorrhages for no detectable reason. As a rule the bleeding is not continuous; it may stop for a few hours or more, to return again. Essential thrombopenic purpura is divided into the acute and chronic forms; the latter is further subdivided into chronic intermittent and chronic continuous. In the chronic intermittent form there may be freedom from any purpuric manifestations for long periods, lasting sometimes many years. The chronic continuous type is characterized by incomplete remissions, the patient suffering constantly from a hemorrhagic tendency, at times slight, and at times more severe.

According to Piney(7), "cases of chronic essential purpuras seem to be diagnosed less frequently than should be the case. because it is usually expected that a purpuric rash must accompany the exacerbations; this is by no means the case; the malady is a hemorrhagic one, but not necessarily a purpuric one."

Of the hemorrhages from mucous surfaces, epistaxis is the most frequent; hemorrhages from the gums and the oral mucosa come next in the order of frequency; hemorrhages from any part of the gastro-intestinal mucosa or uro-genital lining are relatively common. The skin lesions consist of purpuric spots, pin-head to pea size, and ecchymotic infiltrations which may cover large surfaces of the body. The purpuric eruption is generally within the skin, though raised macular spots may be observed simultaneously.

The main points in the diagnosis of essential thrombopenic purpura are: (1) spontaneous bleeding from mucous surfaces, often associated with purpuric skin lesions, (2) thrombopenia, (3) prolonged bleeding time (usually above 10 minutes, occasionally lasting for hours), (4) blood picture of a secondary anemia, as a rule in proportion to the blood lost and (5) associated phenomena of capillary weakness, such as a positive Rumpel-Leede's or tournquet test, and tendency to bruise-marks on the slightest provocation. Excepting the above enumerated findings, the physical examination is negative. The lymph nodes are not swollen, the spleen is not palpable, the temperature is around normal. Post-hemorrhagic temperature elevations are occasionally observed, due mainly to blood absorption. The etiology so far is unknown. Sex does not play any role here as it does in hemophilia; age has some bearing: most of the cases observed are in children and young adults. Heredity is not an accepted factor, though the term "Hereditary Hemorrhagic Thrombasthenia" has been suggested for this malady by Glanzmann (cited by Piney(7)). The prognosis is usually good, except in the very acute cases. or where bleeding takes place into a vital tissue. The treatment is not very satisfactory since the etiology is obscure, though, in the main, successful. Knowing that the platelet deficiency is responsible for this syndrome, we concentrate our efforts on all the methods that may bring about a rise of the platelet level in the blood. Mention may be made here that various levels of platelet counts have been set by different observers below which bleeding takes place. This level is set by some authorities as low as 10,000 per cmm., and by others as high as 75,000.

The quickest method to accomplish a rise in the blood platelets is by transfusion. Healthy blood usually contains around 300,000 platelets per cmm. A pint of healthy blood distributed in the patients circulation would supply about 30,000 platelets to each cm. These, together with the patients available platelets, are generally sufficient to strike a point above the critical level. A spectacular improvement after a transfusion is hence often observed. This improvement in many cases is transient, lasting only a few days, because of the rapid destruction of foreign elements introduced into the blood stream.

Besides the mechanical addition of platelets to the patient's blood, the transfusion often accomplishes a biologic change: the introduced blood serves as a stimulus to the patient's bone marrow; the activity of the megakaryocytes may be renewed; a lasting improvement then results.

It is almost axiomatic that small quantities of blood are just as effective as large ones from the standpoint of myeloid stimulation. With this in view many observers recommend injections of 10-15 cc. quantities of whole blood instead of the large transfusions. Good results have been obtained from repeated intramuscular injections of whole blood.

Foreign proteins also act as stimulants to the bone marrow, and are often used.

Adrenalin inoculations are usually followed, in normal persons, by a lymphocytosis, which passes over into a neutrophilia and thrombocytosis (Schenk, cited by Piney(7)). On the basis of this observation, repeated small daily doses of adrenalin are advocated.

In 1916 Kaznelson (cited by Christian(2)) reported a case which was successfully treated by splenectomy. Later Kaznelson formulated a theory according to which Werlhof's disease is primarily due to a hyperfunction of the spleen; the bone marrow, according to this theory, is not affected. In accordance with this theory, he suggested the term "thrombolytic purpura" instead of thrombopenic purpura. Accepting Kaznelson's view, one should recommend spleenectomy as the only logical cure for this condition. The accumulated data on the histo-pathology of the removed spleens definitely disprove Kaznelson's theory. The greatest majority of the spleens removed did not show any structural changes, nor was there any increase in size.

From a recent report on twenty surgically removed spleens at the Mayo Clinic, MacCarty(5) relates that he has not been able to distinguish this type of spleen from any normal spleen. He also mentions that they are rarely much larger than normal. Cases are even on record where the size of the spleen was much smaller than normal; still the hemorrhagic syndrome, on the basis of platelet deficiency, was much in evidence (case reported by Bloomfield(1)). While the theoretical basis in favor of spleenectomy, as advanced by Kaznelson, is far from solid, the practical therapeutic results of splenectomy are very good, sometimes spectacular. Leaving out the theoretical considerations about the role of the spleen in the economy of platelets, one cannot help but agree that in certain cases of Werlhof's disease splenectomy is a life saving measure. One should always bear in mind though, that splenectomy is not a very simple operation and that the spleen may be of greater value to the body than we realize at the present. From a series of reports collected by Christian(2) he formulated the following conclusion: "There can be no doubt that in certain cases of thrombopenic purpura splenectomy is an effective measure. However, Leschke and Wittkower emphasize that there was a mortality in their collected cases of nineteen per cent, and say that splenectomy is to be recommended only as a life saving measure or when the disease seriously interferes with the patient's work."

The following two cases will serve to illustrate both methods of treatment, medical as well as surgical. I wish to mention here that the complete findings in these two cases, as well as in the other cases that will follow, are not given. Only the important and essential points from their records have been abstracted.

Case 1. Essential Thrombopenic Purpura, treated medically.

A girl, aged 5, entered the Mercy hospital of Council Bluffs, Iowa, on June 11, 1931. Her previous history was negative. Six weeks before admission she began to have nose bleeds and oozing from the gums. A rash was noticed by her parents consisting of elevated red macules and small dark red spots within the skin. There was some itching with the rash. After a period of two weeks the bleeding stopped and the rash faded. One week before admission she had a reappearance of the same condition. On examination, purpuric spots were found in the mouth, under the eyes and on dorsum of the hands. Large ecchymoses were found over the inner aspect of the right thigh and over the vulva. A macular eruption was also found on the trunk, the macules showing surface excoriation.

The blood examination: Hgb. 58%, R. B. C. 2,620,000, W. B. C. 6,000 of which 55% were polynuclears. There was some polychromatophilia, and basophilic granules were found frequently in the red cells. The platelet count was 66,000 per c.mm. The clotting time was 5 min., and the bleeding time 15 min. The clot was soft and did not retract in 24 hours.

During her first week in the hospital the temperature was near normal, reaching 100.4 as the maximum. She had frequent nose bleeds, some of them very profuse. Whole blood was given intramuscularly with apparent benefit. New crops of purpuric lesions kept on appearing frequently. On June 28 she became very restless and showed signs of meningeal irritation. A lumbar puncture done on June 29 disclosed a clear fluid, under pressure; 30 cc. were removed. It contained 50 cells per c.mm., mostly mononuclear. The fluid proved to be sterile. The meningeal irritation subsided, but the purpuric manifestations repeatedly came back. Intramuscular blood injections seemed to be of decided benefit in arresting each new flare-up. During the month of July she was more than "holding her own." On August 4th, she developed a severe diarrhea with bloody stools. Nose bleeds were very frequent. The same treatment was intensified. She commenced to show definite signs of improvement about September 10. The last recorded nose bleed was on September 15. From then on she improved steadily, and left the hospital on October 6 in good physical condition. She was seen last by her family physician in March, 1932. She has fully regained her health and has not had any sick spell since she left the hospital.

Case 2. Essential Thrombopenic Purpura, treated by Splenectomy.

A girl, aged 16, was admitted to the University hospital in Omaha, on January 23, 1932. There was nothing of importance in her past history. On January 13, following a throat infection, she first noticed dark red spots on her left forearm. Lesions of the same type appeared on her body and neck the following day. Soon large "black and blue marks" appeared on different parts of the body without any trauma. A hemorrhagic spot made its appearance in the sclera of the left eye on Jan. 19. A severe nose bleed, requiring packing, occurred on Jan. 21. Excepting the purpuric lesions, the physical examination did not reveal any findings of importance. Blood examination on admission: Hgb. 85%, R. B. C. 4,800,000, W. B. C. 9,200 of which more than 60% were granulocytes. Clotting time 10 min., bleeding time 20 min. The clot was non-retractile. The platelet count varied from 48,000 to 118,000. Between the day of entrance and March 5, she had very frequent attacks of epistaxis. The nares were packed many times, but only with temporary benefit. She was getting very restless and discouraged. On March 5 the spleen was removed. The platelet count rose next day to 220,000. The recovery was uneventful. She was dismissed from the hospital with a platelet count of 320,000, in good physical condition.

These two cases. more or less similar in their clinical behavior and blood findings, were treated, one medically and the other surgically. Time will show the difference in results, should there be any.

The third case presents a somewhat different shade of the same condition.

Case 3. Essential Thrombopenic Purpura, Bordering on Aplastic Anemia.

Boy, 11 years of age, was admitted to the Mercy hospital on November 21, 1930. Nothing of importance in the past history. The history of the onset of the present illness was not very reliable because the patient's mother was generally away from home during the day, working, and the boy left to himself most of the time. He remembered that about six weeks before admission he commenced to feel weak. Many times he was forced to sit down and rest after walking a few blocks. About three weeks before admission bleeding from the gums developed. Spells of diarrhea became frequent at the same time. When admitted to the hospital, the boy looked very pale and undernourished. There was continuous oozing of blood from the gums. The tongue had areas of brownish discoloration. Purpuric lesions were found on the extremities and abdomen. The blood on admission gave the following findings: Hgb. 23%, R. B. C. 1,270,000, W. B. C. 1850 with 30% Polynuclears and 70% lymphocytes. Slight anisocytosis and some achromia of the red blood cells. The platelet count was 7,000 per c.mm. Clotting time 5 min., bleeding time 12 min., the clot was soft and did not retract.

The bleeding from the mouth and nose was almost continuous. He was transfused six times within the period of two months from the date of admission. The transfusions did not seem to be of much benefit. He would quit bleeding for a few hours or a day, and start all over again. His red blood count was fluctuating between one and two and one-half millions, being near the one million point most of the time. The leucocyte count ranged from 1800 to 2600. A decided lymphocytosis was always in evidence averaging around 70%. The platelets were between 5,000 and 10,000. He was obviously failing. In a final attempt to improve the condition, the spleen was removed on Jan. 17, 1931. Only a very slight response was obtained from the bone marrow after splenectomy: his platelet count rose to 27,000 and the leucocyte count went up to 3,350. Bleeding from the mouth started again four days after the operation. All means to combat the condition were exhausted. He died on Feb. 1, 1931. Permission for an autopsy was not obtained.

This case presents an extreme degree of acute thrombopenic purpura with evidence of a general aplasia of the bone marrow. The findings favoring the contention that the bone marrow as a whole was affected are: (1) extremely low red blood count, (2) persistent leucopenia and (3) pronounced lymphocytosis. In the average case of essential thrombopenic purpura the leucocyte count is either normal or slightly elevated. Though Guller and Lawrence(4) reported five cases that had definite leucopenias (Case No. 4 of their series had a count as low as 800 per c.mm. at one time), yet this case, in my opinion should be considered as one bordering on aplastic anemia.

Minot(6) expresses the view that "some cases suggest a midway stage between purpura hemorrhagica and aplastic anemia''. In the masterful article on Aplastic Anemia or "Aleukia Hemorrhagica", as he names it, Frank(3) points out that "cases of thrombopenia may run into aplastic anemia. Not only the platelets then are lacking in the blood but also the polynuclear and eosinophilic cells disappear progressively. The marrow at autopsy consists of a fatty marrow lacking in megakaryocytes and granulocytes and showing an increase in small lymphocytes."

This case could be classed as an aplastic anemia in which the purpuric element is outstanding.

Aplastic Anemias are often observed in which the extreme anemia is the outstanding feature; the purpuric element may be relatively unimportant and totally overlooked. Such cases are often mistaken for pernicious anemia. The following case is a good example of aplastic anemia with pernicious anemia manifestations.

Case 4. Aplastic Anemia with a suggested pernicious anemia picture.

A woman, 33 years of age, entered the University hospital on May 24, 1930, complaining of (1) extreme weakness, (2) chills and fever, and (3) swelling and pain in the right axilla. Her past history was negative. Four weeks prior to admission she had a sore throat; one week later axillary pain and swelling developed, followed by a respiratory infection. The temperature on admission was 101.4. The blood findings were as follows: Hgb. 30%, R. B. C. 950,000, W. B. C. 1600 with 84% lymphocytes. A history of prolonged and excessive menstrual bleeding was obtained. Examination of the gastric contents disclosed a very low acidity, ranging from zero to six for the free HCl, and the total acidity also proportionately low.

With histamin, however, a good response was obtained, the acidity came up to a good normal.

She remained in the hospital until July 6, 1930. Her temperature was fluctuating between 99 degrees and 104 degrees the first few weeks, and remained around the normal line the last two weeks. She was transfused twice: on June 3 and 10. Her red blood count was up to 3.070,000 on July 5, when she left the hospital. Her leucocyte count, though, was persistently low, between 1500 and 2600, and the relative number of lymphocytes always very high, above 70%. The hemoglobin at the beginning was high in proportion to the red count, giving her a high color index. With the improvement in the red counts after the transfusions the color index came down to less than unity.

On January 23, 1931, she reentered the hospital. At this time purpuric patches were found on the chest and legs. She did not remember definitely when the purpuric lesions made their first appearance. After she left the hospital in July she was feeling fairly good for a period of about four months. In November she had a persistent and severe "cold". Her weakness became progressively worse. She developed chills and fever. Persistent "menses" became troublesome; she would menstruate every two weeks, the flow lasting for one week. During this period of observation in the hospital she was running a septic temperature. Her red blood count was around one million during the first three weeks, progressively diminishing towards the end; it was recorded as 593,000 on February 12. The leucocyte counts were persistently low, mostly below 2,000. The platelet counts varied between 140,000 to 62,000. The clotting time was 13 minutes; and the bleeding time 37 minutes.

Reticulocytes less than 1%. She was transfused on February 12 with little benefit. She died on February 25, 1931. An autopsy was not obtained.

In this fairly typical case of aplastic anemia the purpuric factor was comparatively light; it was partly masked by the fact that the uterine hemorrhages were at first considered as menses. The anemic factor was the outstanding one. One could readily mistake this case for a pernicious anemia, with the color index above unity and the gastric contents bordering on anacidity.

The chapter on the symptomatic or secondary thrombopenic purpuras is but a continuation of the subject of aplastic anemia. Here also the underlying basic factor, responsible for the purpura, is the injury to the megakaryocytes. Furthermore, since these cells are not isolated elements of the bone marrow, the other elements are also often hit by the same noxa. The mechanics, in other words, are often the same as in aplastic anemia; the difference being only in that we can ascribe the condition to a known agent, whereas in aplastic anemia or essential purpura the offending agents are unknown.

(To be continued).

HYPERTHYROIDISM AND NEURASTHENIA*

W. J. ARRASMITH, M. D.,
Grand Island, Nebr.

During the past decade there has been great advancement in our knowledge of hyperthyroidism. Ten to fifteen years ago most practitioners were not recognizing toxic goitre until the disease was well advanced. It remained for the specialists in our larger cities and clinics to recognize the condition in its early stages. Volumes have been written and authorities have so frequently discussed the various phases of the subject that today every practitioner, even in the smallest hamlet, is now looking for the various types of goitre. In their efforts to identify these cases early, there is certain to be confusion in differentiating neurasthenia, a condition which we do not thoroughly understand, but nevertheless exists.

The symptomatology of neurasthenia is most varied. Because of its multiplicity of symptoms, the patient usually succeeds in making the symptoms conform to the disease which he most fears. On the other hand, hyperthyroidism presents a rather definite train of symptoms. Unless the symptoms of the case in hand can measure up to these, a diagnosis of hyperthyroidism should be made with considerable reserve.

In hyperthyroidism, a carefully taken history will reveal the wavelike character of the disease. The waves of toxicity are measured in weeks or months and are followed by a comparatively free interval, lasting a few weeks. During the period of increased toxicity, the symptoms grow progressively worse until sometimes a crisis is reached. The crisis consists of loss of appetite, painless vomiting, diarrhea, etc. In neurasthenia there may be periods of excitation. On close questioning. it will be found that these periods may last a few hours to a few days, then be followed by a period of complete freedom of all symptoms for several days. These waves are never topped by a crisis as they are in hyperthyroidism.

In hyperthyroidism the over-stimulation of all the physiological functions in the body is very evident. These patients are quick in action, alert, and very responsive to any interrogation. They are irritable, restless and perspire easily. When sitting they are erect, their hands, feet and eyes are in constant motion. The picture resembles that of a nervous race-horse just before the start. Neurasthenics give no such impression. Their movements are those of one in a state of exhaustion. They are usually accompanied by a well-trained corps of sympathetic friends, whose duty it is to look after the comforts and welfare of the patient. They invariably fail to give quick and accurate replies to questions, and are inclined to drift from the point in view and magnify an ailment in some remote part of the body. They sit and walk slovenly, and are very receptive to any sympathetic suggestions.

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As a matter of fact, our first contact with the patient will furnish us with many clues which are very suggestive in making the differentiation. However, it is not advisable for one to allow the information to bias his judgment in a way that he will not give credit to later findings which might altar the diagnosis entirely.

Nervousness, palpitation and tachycardia are symptoms common to both hyperthyroidism and neurasthenia. If too much stress is given to this group of symptoms with the omission of more important, definite, diagnostic symptoms of hyperthyroidism, errors in diagnosis will be frequent. In hyperthyroidism the patient is not aware of nervousness early in the disease. Friends or relatives will notice the person is more active than usual. As the disease progresses, the nervousness becomes more pronounced and the patient notices for the first time that he is becoming nervous. He is inclined to minimize his symptoms as much as possible. In contrast, the neurasthenic very willingly informs you of his nervousness. His nervousness does not grow progressively worse, but is apt to be present for a shorter or longer period with a free interval, varying in time. The tremor may be fine and simulate closely in character that of hyperthyroidism. but the moist, warm hands of the hyperthyroid and the cool, comparatively dry hands of the neurasthenic will differentiate the case very easily.

Palpitation and tachycardia are symptoms so frequently present in many other diseases it is difficult to definitely classify them in making any diagnosis. The attacks in the neurasthenic are usually precipitated by grief, worry or some other form of mental insult. The heart will remain rapid for a few hours to a few days and gradually approach normal as the mental attitude improves. Between the attacks the heart beat is regular and the pulse soft in character.

In the hyperthyroid the attacks persist over a period of weeks or months. Grief, worry or mental insult may produce an attack but more often they come as a result of over-stimulation of the entire nervous system. The pulse is always bounding in character and strikes the finger with considerable force. The blood pressure is of the utmost importance. In fact, the blood pressure constitutes one of the most definite differential findings between the two diseases. In hyperthyroidism there is always an increase in the systolic pressure accompanied by a low diastolic pressure. The difference between these two pressures is the pulse pressure, which is always high in toxic goitre. In most cases of neurasthenia, there is a low systolic with a comparatively high diastolic, giving a much narrower pulse pressure. Systolic pressures ranging from 90 to 110 and diastolic ranging from 75 to 80 are the common rule, in the neurasthenic. In hyperthyroidism, systolic pressures of 120 to 140 and diastolic pressures invariably under 75 are the common rule. If your reading does not conform closely to these figures, hesitate before making a positive diagnosis of hyperthyroidism.

One of the most interesting manifestations of hyperthyroidism is the change that takes place in the body metabolism as a result of the overstimulation. The excessive dosage of thyroxin or altered thyroxin causes the consumption of an increased amount of food, air and water. As long as the body is able to take in a sufficient amount of food to keep up the excessive metabolism there is no loss in weight. Eventually the stimulation becomes so great that the body tissues are utilized. This is manifested by loss of weight in spite of the excessive food consumption. There are only two diseases known that will produce a loss in weight in the face of excessive appetite. One is diabetes mellitus and the other is hyperthyroidism. It is rare for the neurasthenic to have an excessive appetite. His appetite is inclined to be poor. This, coupled with worry and excessive introspection, will account for his loss in weight, which is usually less marked than in hyperthyroidism.

Neurasthenics with large, protruding eyes have been erroneously interpreted as having exophthalmus. This mistake can oftentimes be avoided by asking friends or relatives if they have noticed any increase in the size of the eyes. Furthermore, the large eye of the neurasthenic is usually droopy in character and has the expression of exhaustion in it. There is no definite Stellwag sign present. It lacks the snappy, quick-winking eye of the true exophthalmic goitre, in which there is always a widening of the interpalpebral fissure. a lack of convergence, and a marked stare. Exophthalmus is usually a late manifestation of hyperthyroidism and is not present in all cases.

The early hyperthyroid is reluctant to admit that he is losing strength. He is stimulated to such a degree that he is unaware that muscular changes have taken place. During the precess of examination, have the patient step up on your examining table unassisted. He will invariably use his hands in assisting himself to ascend the one step necessary before sitting. This in itself reveals weakness of the quadriceps muscles or the so-called quadriceps loss. The neurasthenic also manifests muscular weakness, but it is of an entirely different character. He will get on to the examining table without the assistance of his hands. After ascending the step he will sink into the sitting position as though he were entirely exhausted.

As the examination progresses, other important differential points will be observed. Bruits and thrills may be found at one or more poles of the thyroid gland. True bruits or thrills are never found in the neurasthenic. False bruits or bruits transmitted from the carotids, may be misinterpreted and with other symptoms may lead to an erroneous diagnosis.

From the laboratory point of view, the basal metabolic reading is of most importance. The test is especially important in identifying the early hyperthyroid and is of inestimable value in differentiating the hyperthyroid from many other diseases. In the average or moderately advanced cases, the B. M. R. is not essential to make the diagnosis. The history and symptomatology should always be given preference and the B. M. R. should be utilized only to verify or disprove the diagnosis.

The B. M. R. is a very technical laboratory test. A machine, a patient, and a technician to operate the machine, are required to complete the test. The market has been flooded with various types of B. M. R. machines, some of which are very accurate, others not so accurate. Therefore, it is advisable to be as certain as possible that the machine in use is accurate.

The patient may be very responsive and carry out his technical part of the examination well. The contrary is also true, he might have eaten or taken unnecessary exercise or committed some other error prior to or during the examination. The possibility of technical errors on the part of the technician must be kept in mind. Therefore, it is only logical to be suspicious of a B. M. R. which does not conform to the symptomatology. If there is any doubt, the test should be repeated one, two or three times and then check the machine on a normal person to make certain of the accuracy of your test. In other words, do not rely wholly on the B. M. R. for the diagnosis. It is only a machine and is subject to many errors and is liable to falsify the diagnosis.

It is almost impossible to enumerate and describe all of the symptoms common to neurasthenia. Moreover, there is no definite group of symptoms characteristic of the disease which could be utilized to make a positive diagnosis. The excessive sweating, moist skin. quadriceps loss, blood pressure and B. M. R. are some of the definite symptoms always found in hyperthyroidsim. Therefore, it is well to reiterate that hyperthyroidism is made up of a definite group of symptoms characteristic of the disease and anything not conforming to them should be looked upon with considerable suspicion.

The treatment of hyperthyroidism is surgical in most instances. It is axiomatic that the earlier the disease is recognized and the proper treatment given, the less will be the permanent damage to the patient. Furthermore, the earlier the disease is recognized, the less the surgical risk. Ten years ago, surgeons were operating upon more well-advanced patients than they are today. Granting that there is considerable improvement in the pre-operative treatment by the use of iodine, we also must admit that cases are coming to operation earlier, both of which have lowered the mortality from five to ten per cent to less than one per cent. Surgery in the hyperthyroid makes an everlasting friend to the surgeon and the profession. Surgery in the neurasthenic, especially on the thyroid gland, is almost tragical and always makes an enemy. Upon the diagnosis rests the treatment. The one requires medical and suggestive treatment, the other surgery. If in doubt, do not operate, but treat and wait.

DISCUSSION

FRANCIS W. HEAGEY, M. D., (Omaha): Dr. Arrasmith takes the term "neurasthenia" and limits himself to that. It is a broad term which admits of many definitions. Most of our trouble is due to the fact so many of these thyroids do not fall into the definite syndrome of toxic thyroids. I have formed the habit of calling them "dysthyroids". They do not all have loss of weight and strength in the classical fashion they should. They come in every conceivable combination of disturbance as far as thyroid physiology is concerned. We are often puzzled as to whether the thyroid is back of these disturbances.

I was interested in what Dr. Arrasmith said as to basal metabolism. I think most of you can guess from the clinical symptoms and history as closely as the average machine can give it to you. There are so many errors, that if it fails to tally with the clinical symptoms, two or three determinations are necessary to get an accurate metabolic rate.

Dr. Arrasmith brought out clearly the differential diagnosis. Two things I rely upon as of major importance came from Dr. Plummer. He said that when his patients see his examining table, the neurasthenic says he can't get up, and does. The toxic thyroid says he can, and can't.

There is in the toxic thyroid a definite muscle disturbance——a loss of muscle power. This has helped me as far as trying to make up my mind whether the thyroid is involved. I want to emphasize; the toxic thyroid has symptoms day after day. They extend over periods of weeks or months with little change. The neurasthenic can be sick in the morning and be well at nine o'clock; or vice versa. They change half a dozen times during the day. You can apply that to other conditions—gastrointestinal disturbances—functional disturbances — through all sorts of changes; while the organic disturbances tend to maintain an even tenor of symptoms over a period of time.

One other thing: When a heart begins to misbehave, either from the standpoint of change or rhythm —as Levine of Boston has brought out, the thyroid must be investigated. When you are puzzled, and there is no endocarditis, or history of extra exertion, you have this adenoma hidden in the thyroid as an explanation of your heart disturbance. The more we see these hearts that fail to fall into the category of something wrong with the heart, and the more we think of the thyroid, the more will we be able to handle these heart cases.

That is a dangerous class to deal with—those cases we diagnose as neurasthenics, who are benefited by doing something to the thyroid. It may surprise you to find this pathology. When you think of the complicated change in the ovaries, thyroids, and adrenals, I think it only serves to complicate the problem.

I agree with Dr. Arrasmith in his deprecation of the excessive use of Lugol's solution. If you are in doubt, try Lugol's in small doses.

Surgery is the only treatment for a toxic thyroid.

B. R. McGRATH, M. D., (Grand Island): I rise to make more impressive the excellence of the paper on the points covered, and also to express my appreciation of a medical man saying the only treatment of toxic thyroid is its removal.

The neurasthenics we always have with us. They have a tendency to accommodate themselves to any train of symptoms. They are difficult to diagnose when they have or do not have organic trouble. Usually there is something wrong with them. Our diagnostic methods are not fine enough to get all of their disorders. Whatever that additional load is that may be added to the nervous system in a neurasthenic, we want to take care of it. If there is an infected gallbladder, it should be removed. If there is a toxic thyroid, it should also be removed. As this paper has said the neurasthenic presents a series of symptoms that make it very difficult in this particular thing to rule out positively the presence or absence of thyroid. It is these diagnostic points Dr. Arrasmith should be especially commended for giving us today. It is a paper well worthy of careful study by every member of this Association when it is printed.

DR. ARRASMITH (closing): The inspiration for writing this discussion came as a result of seeing several cases of neurasthenia which it was thought were erroneously diagnosed as hyperthyroidism. Apparently the diagnostician was not familiar with the definite symptoms characteristic of hyperthyroidism, or he relied too much on a machine to make the diagnosis. Let us recall that our senses as used by the old Doctor before the days of mechanical apparatus is still supreme.

I want to thank you for your attention and also the other two gentlemen for their discussion.

OSTEOMYELITIS OF THE SKULL*

C. G. MOORE, M. D.,
Fremont, Nebr.

My purpose in choosing this subject is prompted by a very interesting case which I recently had and which I wish to report. There are numerous references to osteomyelitis of the skull, secondary to nasal, sinus and aural suppuration, found in medical literature. Several authors have recounted their personal experience with one or more cases of this malady. There is, however, a wide diversity of opinion in respect to many phases of the disease. The etiology and mode of spread of the infection through the cranial vault has offered much speculation. There are about seventy-three cases of osteomyelitis of the skull appearing in medical literature to date, according to Furstenberg of Ann Arbor, and it is through his observation I have gained the following data. Most of the cases reported are those following frontal sinuses and nasal infection, but a very few by a hematogenous dissemination of infection, such as the primary lesion being in some remote part of the body than that of the head.

In order to discuss the process of this condition, we will have to recall the vascular system which supply and drain the vault of the skull. Let us recall that the cranial bones derive nearly all of their blood supply from the arteries within the cranial bones, as this has been demonstrated by large areas of periostium having been stripped back from the cranial bones, without affecting the underlying bone. The dura, or internal periostium, performs an important function in the life of the cranial bones, it conveys nearly all the blood vessels to and from the cranial vault and assumes an important role in the osteogenetic process of repair.

With the anatomic relations in mind let us turn now to the pathologic and clinical side of osteomyelitis of the skull. There is proof in some instances that the suppurative process starts its invasion on the under surface of the cranium, it originates as a thrombophlebites of the diploic system of anastomosing vessels within the dura mater finally entering the spongy tissue of the calvarium between its outer and inner plates. The medullary tissues become filled with purulent granulations, the lamellae break down and there are formed osseous sequestra with further infiltration of the inflammatory disease and the inner and outer plates of the cranial bones are lost. On the dura a cushion of purulent exudate forms which rapidly tends to organize but exerts a distructive influence upon the inner table of the cranium and it is probable that pathologic changes upon the dura is responsible for further extension of the infection.

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When the external plate and periostium are destroyed, the inflammation spreads to the soft parts of the head, producing the typical clinical signs of oedema and swelling. In relation to the above observation we do not wish to minimize the importance of infection by continuity of tissue.

We now come to a consideration of the influences, if any, which tend to limit the spread of infection through the cranial vault as in some cases the cranial sutures seem to exercise an inhibiting influence upon the spread of infection. Histologically, a serrated suture consists of a zone of highly vascular tissue bounded on both sides by a dense layer of compact bone. It is of microscopic structure and is probably a barrier to the diffusion of an osteomyelitis to adjacent cranial bones. To some this suggests a point of value in the surgical treatment, namely, to limit the removal of bone to a suture when it is practicable.

The dura, which at first is highly resistant to the infection, finally yields to the invasion and a diffuse purulent meninginitis or a brain abscess are common sequelae. Sometimes the large cerebral sinuses are invaded and thrombophelitis with septicemia kills the patient.

The treatment of osteomyelitis of the cranial vault calls for surgical interference of a most formidable character. The disease is highly destructive and does not show a tendency to spontaneous resolution. The only hope for the patients recovery is the radical removal of the portion of the skull which is the seat of the infection.

Both the outer and inner plates should be removed and well beyond the limit of the disease and as described before, they should be removed to the suture line. Vaseline, iodoform or other medicated gauze should be placed between the dura and skin. When these are removed daily the wound should be irrigated with something like Dakin's solution. The incisions in the scalp should not be sutured, but brought in as close apposition as practicable and allowed to granulate.

The following is the history of a case, which fell under my observation and demonstrates that osteomyelitis of the skull can be caused by a hematogenous infection as well as by continuity of tissue.

HISTORY

H. K., male, age 47 years, single, carpenter by trade, came under my observation March 29, 1930.

Family history—negative except he had one sister who was operated on and developed a post operative mania with complete recovery in about three months.

Personal history—Has had several of the diseases of childhood. Operation for gangerous appendicitis about twenty-five years ago. His convalescence was very slow, requiring about six months before complete recovery. Had a hemorrhoidectomy about ten years ago, uneventful recovery. This man is a scary apprehensive old bachelor. His present illness was caused by striking his index finger of the left hand with a hammer while nailing a studding on March 27, 1930. He did not pay much attention to the injury at the time, but two days later his finger started to swell and pain him. He consulted his local doctor who wanted to incise the finger. He objected to this, and consulted me the same evening at which time I confined him to the hospital and incised and drained the finger. The infection cleared up in ten days, and he left the hospital April 10, 1930. He consulted me with a flareup of his former trouble in the finger and hand, April 19, 1930. He was put back in the hospital again, and treated as before and was advised to have the finger amputated as the bone showed necrosis up to the second joint. He procrastinated until April 30, 1930, when he was again admitted to the hospital and I amputated his finger at the metacarpal phalangeal joint. He stayed in the hospital until May 15, 1930, at which time his amputation wound had healed and the infection disappeared from the arm. The latter part of September, 1930, he consulted me in regard to an impacted molar tooth. I advised him not to have the tooth pulled, but to wait a while, explaining to him the danger of a bone infection of the jaw, so soon after a general infection. He did not heed my advise, so had the tooth extracted October 13, 1930. The operation evidently required quite a bit of traumatizing of the jaw bone. In November, 1930, he again consulted me, this time in regard to a swelling on the left side of his face, and I referred him back to his dentist.

December 9, 1930, he again consulted me, at which time an x-ray of his jaw showed an osteomyelitis of the inferior border of the right mandible. On December 5th, I removed the sequestra from the right side of his lower jaw. February 5, 1931, he returned and I found him to have a necrosis of the left side of the jaw and on February 23, 1931, I removed the sequestra from the left portion of the jaw. I did not see any more of him until May 1, 1931, when his local doctor sent him to our local hospital and requested that I examine him. At this time he was running a temperature around 102 to 103, coughing and expectorating a foul pus, and showed a small amount of hematuria. He was x-rayed and found to have a right side pulmonary abscess. He told me he had been up to Rochester for an examination and was confined there in the hospital from March 20, 1931, to April 18, 1931. (A recent letter from Dr. New states that it was their opinion he probably had a pulmonary and renal infarct, but as his condition had cleared up they did not feel that any further investigation was indicated). This time he was confined to the hospital for four weeks and treated as a medical case.

During the summer of 1931, he improved somewhat but still had a cough and expectorated some blood and pus. September 29, 1931, he noticed a swelling with fluctuation on the posterior portion of his head, which did not cause him any pain. I aspirated this tumifaction and found it contained a thick light greenish pus. X-ray examination showed an osteomyelitis of the acciptal bone. On October 2, 1931, I removed both plates of the accipital bone up to the line of suture, under local anesthesia, and in a few days I applied maggots with the hope that they might penetrate areas where I could not. He made a good recovery after this treatment, the wound healing nicely.

About the first of the year, 1932, the patient noticed some tumifaction on the top of his head, also was losing more weight and still coughing. On February 17, 1932, his chest and head were x-rayed again and this time the abscess in the lung was found to be larger and more superficial than it had been on the previous occasion. The x-ray now showed osteomyelitis of the parietal and frontal bones. On February 18th, the patient was admitted to the hospital and under local anesthesia all the visible sequestra of the pariental bone removed, which showed most of the necrosis was confined to the inner plate. The lung abscess was drained and contained about ten ounces of foul smelling pus. The patient recovered very nicely from this formidable operation with the exception of an infection into the right cervical gland, which was drained. He was able to sit up in a chair for a few hours a day. On February 27th, he complained of lassitude and said he did not feel well. That evening his temperature and pulse rose, his face started to swell, become red and have a leathery touch. He was removed from the hospital, isolated and died March 3, 1932, of general infection.

Animals injected with the pus from these lesions was negative. The only organism found was the streptococcus.

From observation of this case I have come to the following conclusions.

That osteomyelitis of the skull can come from a hematogenous dissemination of an infection as well as from continuity of tissue. That the infection is carried by the dura mater and the inner table of the skull. That the line of suture is not always a barrier to extension of the infection and necrosis. That treatment must be of a formidable character, and the prognosis is always grave.

DISCUSSION

H. WINNETT ORR, M. D. (Lincoln): In considering this case of osteomyelitis, as well as the general principles of treatment, I think there are certain important fundamentals to bear in mind. This man's history is typical of an acute infection followed by a chronic osteomyelitic course. During the past ten years I have been trying to interest the profession in a plan by which we may avoid the complications and sequelae of acute bone infection that have occurred in this and so many other similar cases.

It has seemed to me that direct extensions and metastatic infectious complications are due to the fact that the primary lesion has not been thoroughly drained at the time of the first attack, or properly protected against secondary mixed infection at the time of doing post-operative dressings or secondary operations.

As to this case of osteomyelitis of one of the phalanges, this man had a direct extension first in the hand, so that the finger had to be amputated. Later he had a secondary infection due to the extraction of a tooth, and probably as Dr. Moore suggests, this surgical work should not have been done so soon afterwards. Upon further direct extension to the bones of the skull, the problem was further complicated by the incessant drainage, with frequent dressings. It was dressed daily, and irrigated with Dakin's solution, to which program, as Dr. Moore knows, I object. It seems to me that with such frequent dressings we have too much disturbance and too much exposure of the wound to new infection. You are exposing the patient to new organisms and traumatism and to other dangers he could avoid by a program of infrequent dressing.

The osteomyelitis in this case is no different from that in a compound fracture of the skull. We have had many such cases. We do not see so many of the hemogenic kind. Dr. Hohlen and I recently had a case in which the parietal bone was lifted and no dressing done for ten days. The patient drained and healing progressed nicely, with no complications, I think largely due to the fact that no dressings were done. I would like to summarize my remarks by saying that if we can provide adequate drainage at the beginning, and protect these patients against secondary infection by frequent dressings ,and finally immobilize injured and inflamed parts in correct position, we shall obtain much better results.

I hope that you will feel that I am commenting upon this case in the best spirit and using certain points only to advocate my special views. I suggest that these cases should have a simpler policy adopted especially with reference to post-operative care.

DR. MOORE (closing): It seems to me we have a little different condition. You have a double proposition. If you have an osteomyelitis of a bone of the skull, it may involve the inner table first. I do not know how you can treat it without removing it.

DR. ORR: Take it out. There is no objection to that.

One winter night, when the ground was covered with sleet, and the rain was freezing as it fell, the old doctor received a very late call from a family living away on the other side of the city. It was after 1 o'clock when he left home, and his horse—this was in the old days—slid all the way to the patient's house.

He got there about 3 o'clock and found that a girl in the household had a severe cold. It was nothing dangerous.

"How long has she had it?" asked the doctor.

"Three days," answered the mother.

"Why didn't you call me in the daytime?" asked the doctor.

Then came the answer, which made this the favorite story of the Medical Society for many, many years:

"We are poor people, and we aren't able to pay very much, so we thought we would call you when you weren't busy."

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THE COUNTY'S LIABILITY FOR MEDICAL SERVICE

Within recent weeks a great awakening of physicians to their rights has occurred by the refusal of many county boards to allow bills presented for medical and surgical service to indigents and paupers.

County boards in many cases pay drug, provision and fuel bills, without hesitation, but refuse compensation to the physician for service.

In the February, 1931, number of this *Journal*, we published an editorial touching on the liability of counties for medical and surgical service to indigents and paupers. Numerous requests have reached us recently for the citations contained in that editorial.

The citations given are invaluable and the entire editorial is herewith republished for the benefit of the profession.

Several actions have recently been filed by physicians to enforce their claims—and they will win—but court actions should not be necessary. It would seem that few boards would refuse payment of just claims if the matter is presented to them in a clear and dignified manner reinforced by the court decisions cited in the following article.

POOR MAN WITHOUT FUNDS, PROPERTY, OR CREDIT, WARD OF COUNTY, NOT OF DOCTOR

As early as 1884 the courts of Nebraska were invoked to decide the rights of physicians and to state the obligations of counties with reference to the poor and indigent who may become ill or injured and require the services of a physician.

Section 5153 of the Compiled Statutes provides "that whenever any non-resident, or any other person not coming within the definition of a pauper, shall fall sick in any county of this state, not having money or property to pay his or her board, nursing, or medical aid, it shall be the duty of the overseers of the poor, of the precinct where such person shall be, to furnish such assistance to such poor person as they shall deem necessary, etc."

In the case of Gage County vs. Fulton (*N. W. Reporter,* Vol. 19, p. 781), decided in 1884, the supreme court said: "It will be seen that the duty of maintaining paupers, and persons not coming within the definition of paupers, who shall fall sick in any county of this state, and not having any money or property to pay his or her board, nursing, and medical aid, devolves upon the counties; in other words, the statute makes the counties legally liable for the same."

More recent decisions of the supreme court in somewhat related cases are cumulative. (See Plumb vs. York County (*N. W. Reporter,* Vol. 46, p. 938); Shidler vs. York County (*N. W. Reporter,* Vol. 146, p. 949)). The case of Anderson vs. Pawnee County also bears out the earlier decisions. The most recent case bearing on and clarifying the rights of physicians and the duty of county authorities is that of Neslund vs. Dawson County, decided by the supreme court commission about two years ago and referred to in this *Journal* editorially, July, 1929, part of which we again quote.

"This does not mean that the board may arbitrarily avoid liability by a heartless disregard of the most obvious necessities of suffering humanity."

"The service of a surgeon or physician cannot be required as a matter of charity."

"In case of emergency the physician may hold the district liable although he acted without the request or consent of the person designated as overseer of the poor."

"In a proper case the physician may hold the district liable even in the face of the refusal of consent, if lawfully or arbitrarily withheld."

"Neither the county commissioners nor the town supervisors can turn their backs upon the proper claims of a poor person."

"Nor can it be said that the unfortunate pauper, who has met with an accident requiring instant succor is to be remediless; the county or town must provide for him as soon as they may."

The Neslund vs. Dawson County case, it seems, hinged largely on the definition of the term "indigent." It was shown that the father of the injured boy was working at the time of the accident, but was without ready money and was without credit in town. Webster defines "Indigent: Destitute of property or means of comfortable subsistence."

All this points clearly to the proposition that the county is liable not only for paupers, but for emergencies occurring to indigent persons within their jurisdiction.

Medical men have had much difficulty with county authorities taking the proper viewpoint and it is possible that lack of diplomacy in presenting the cases was at the bottom of at least some of them. The above references indicate that the courts have passed upon the question a sufficient number of times to clarify the matter and nothing but absolute stubborness on the part of the board can account for refusal to accept obligation in these cases.

A recent case settled by the county board may be of interest in this connection: A married man, father of four children—a fifth child expected—ranch laborer at prevailing wages, suffered a violent attack of appendicitis. The physician consulted diagnosing imminent rupture, at once took the patient to a hospital and he was operated upon without delay. The patient had stated that he was without money and that he usually drew advances on his wage account. The physician, immediately after the operation, notified the county commissioners of the case and facts pertinent thereto, and stated that under the circumstances the county board would be asked to assume the financial obligation. In due time bills were rendered by the hospital and by the physician and surgeons and the supreme court decision in the Neslund vs. Dawson County case was cited in for authority. Later the board asked the physician to appear before them and in a quiet, dignified manner the matter was fully explained and the decision of the supreme court read, whereupon the county attorney, being asked for his opinion, stated that, assuming that the emergency claimed, existed, the county was liable. The bills were allowed.

The facts above given and citations made should make it easy for physicians throughout the state to show to the county authorities the law and decisions appertaining thereto and to convince them of the rights and duties of the respective parties in cases coming under Section 5153, Compiled Statutes relating to paupers and indigents.

JOINT MEETING ELEVENTH AND TWELFTH COUNCILOR DISTRICTS

A joint meeting of the Eleventh and Twelfth Councilor District Medical Societies was held at Scottsbluff, October 12. This was the second joint meeting and justified the effort. Seventy physicians attended. The scientific program in the afternoon was as given below:

Symposium on Spinal Anaesthesia:

1. "Indications and Contra-Indications for the Use of Spinal and Sacral Block Anaesthesia," Dr. W. J. Gentry, Gering.
2. "Caudal and Sacral Block, Technic and Field of Application," Dr. C. F. Heider, North Platte.
3. "Spinal Anaesthesia, Technic and Field of Application," Dr. J. M. Willis, McCook.

"Granulocytopenia, Malignant Sore Throat," Dr. Adolph Sachs, Omaha.

"Fractures," Dr. Roy Fouts, Omaha.

"Rational Infant Feeding Methods for the General Practitioner," Dr. E. G. Stevenson, North Platte.

"Acute Dilatation of the Stomach," Dr. E. C. Henry, Omaha.

"Medical Mal-Practice," Dr. Roy Fouts, Omaha.

A banquet in the evening featured a series of toasts on The Profession and Its Public Relationships.

"Achievements of Medicine," Dr. J. M. Willis, McCook.

"Child Conservation," Dr. E. G. Stevenson, North Platte.

"Medical Economics," Dr. Adolph Sachs, President-Elect, Omaha.

"Medical Responsibilities," Dr. Roy Fouts, Omaha.

"Personal Relationship—Doctor to Patient," Dr. E. C. Henry, Omaha.

Address—"The University Hospital—Its Services to the State and to the Profession," Dr. C. W. M. Poynter, Dean of the University of Nebraska College of Medicine.

The symposium resulted in the general conclusion that spinal anaesthesia was best limited to selected cases and very careful technic, that ether is still the anaesthetic of general choice. Dr. Sachs gave some new ideas about the blood findings in infections in general, and specifically in malignant sore throat. Dr. Fouts demonstrated the practical applications of plaster splints, and some valuable points in fracture reductions and management. Dr. Stevenson's paper on infant feeding was very practical. Dr. Henry stressed the preventative, and early treatment of acute dilatation of the stomach and the hopelessness of late measures. Dr. Fouts urged less provocative and more prophylactic measures in the control of the problem of mal-practice. Dr. Selby related the history and present situation of the group insurance.

Dr. W. C. Harvey of Gering was elected president; Dr. J. P. Weyrens of Scottsbluff, vice president.

The two districts voted to hold a joint meeting next October at North Platte.

PRESENT STATUS OF MALPRACTICE INSURANCE IN NEBRASKA

August 30, 1932, Dr. R. B. Adams, secretary of the Nebraska State Medical Association, received official notification that the Group Policy, carried by the State Medical Association with the United States Fidelity & Guaranty Company of Baltimore, would be cancelled October 1st. This action on the part of the insurance company followed an all-day conference with officers of the company and the insurance committee of the State Medical Association the previous day, a detailed report of which will no doubt be submitted by the chairman of that committee at the next annual meeting. Dr. Adams accordingly notified the holders of the certificates under that Group Policy, and their insurance expired October 1st. Since that time, I have received numerous letters, telephone calls and inquiries, relative to this matter.

In accordance with the above action, something over six hundred physicians found themselves without insurance on October 1st. Several physicians had taken their insurance for a period of three years, and the notification stated that their unearned premium would be returned to them. However, the company was prevailed upon to re-consider this question, and they later decided to continue these policies in force until they had expired. A few physicians, who had had previous law-suits or threats, had their policies cancelled or the company refused to renew their policies. Other insurance companies, which formerly wrote this type of insurance, have discontinued writing it. The Medical Protective Company, who formerly had a full time agent in this part of the country, has discontinued the agency. As a result of this action, some men are finding it difficult or impossible to obtain insurance at this time. Those who may obtain it, do so at an increase in premium of 25% to 200% over the price paid for the former Group Policy.

It would seem that we are now reaping the reward of some of our former indiscretions, namely: being too ready to criticize the treatment or result of treatment by another physician; failure to disabuse the mind of the disgruntled patient of another physician when opportunity affords; or what is sometimes done, the patient is actually encouraged to believe that his former treatment was improper.

Just this condition has existed among the physicians of Nebraska, in varying degrees in different localities, for a sufficient length of time that we now find ourselves confronted with the highest cost for malpractice insurance of any state in the Union, and some of our members finding it difficult or impossible to obtain insurance.

During the term of the Group Policy, the rate charged was reasonable and yet was 25% higher than some other states carrying a similar policy. Now it has been increased 25% to 200% by this insurance company, and the general attitude would appear to be that they are not eager for this class of business.

This increase in rate will no doubt cause many to drop their insurance protection. This, we believe, to be unwise, and yet we are convinced that the fact the doctor is insured, makes it more profitable for both the designing patient and the unscrupulous lawyer, who would institute an action of this kind.

Since a decision was handed down by the Nebraska Supreme Court, November, 1926, to the effect that it was proper to ask the defendant doctor if he carried insurance, there have been more suits for malpractice than in all our previous history. I have not known of a single case coming to trial in the past five or six years, where the physician carried no insurance. This is not advanced as an argument against insurance; however, the fact that he carries insurance increases his liability of being sued, cannot be denied.

Several times during the past few weeks, I have heard physicians make the statement that "The economic stress of the past few years has rendered them execution proof, and they expected to remain so," thereby practically precluding the possibility of a malpractice law suit. This method may be one solution. Certainly it would not be so inviting as where there were several thousand dollars of the insurance company's money to aim at.

Another solution would be to secure some legislative enactment declaring the question of insurance to be no point of issue in the case. I am informed on good authority that such legislation would be constitutional and in all probability could be enacted.

The real answer to the question, I believe, rests with the members of the profession themselves. In discussing the alarming number of malpractice suits we were having in Nebraska, with the secretary of the Kansas State Medical Society, a member of the Medical Legal Defense Committee of the Illinois State Medical Society and the editor of the *Illinois Medical Journal,* I blamed lawyers having predatory tendencies and various other reasons as causes. I was informed by one of the gentlemen, to which all agreed, that "the fault all rests with our doctors."

Until every physician awakens to a realization that he, too, is just human, and as such, should be more tolerant of the alleged acts of his brother physician, so long as we are given to make disparaging remarks about the other fellow and his work, and until every physician has learned that to foster or aid and abet in any way a malpractice suit against another is only inviting trouble for himself in the future; then, and not until then will this problem be solved.

—R. W. Fouts, Chairman,
Medical Defense Committe, Omaha.

THE PRESUMPTIVE KAHN TEST

The Kahn test is a precipitation test for syphilis, which has been used widely during the past few years. It, like the other precipitation and flocculation tests, such as the Sachs-Georgi precipitation test, and the Kline microscopic slide precipitation test, represents an effort to obviate the more involved Wassermann complement-fixation technic. Each of the precipitation tests requires only simple stable re-agents and laboratory equipment, and is rapidly performed. The routine diagnostic Kahn test is a three tube test, and the results are recorded up to four plus positive. A quantitative Kahn has been devised, in which the results are recorded in units.

Efforts to increase the sensitivity of the Kahn test have led to the development of the Presumptive Kahn test. This test uses a "sensitized antigen" and is a one-tube test. It is done very rapidly. The results are recorded up to four plus positive. The test has been used only to a limited extent to date. It serves as a check on the regular Kahn test. A negative presumptive test and a positive routine Kahn indicates an error in technic. If the regular Kahn is doubtful, the presumptive test should be positive. Because of its greater sensitivity it may be positive when the regulation Kahn test is negative, while a negative presumptive test gives strong evidence of the absence of syphilis.

The regulation Kahn test has been compared in large series with the Wassermann, with some variation in results. The best evidence seems to indicate that the precipitation tests are not quite as sensitive as the complement-fixation reactions and that they should no be relied upon alone for the diagnosis of syphilis. Both the regulation Kahn and the Wassermann tests are said(1) to be run in parallel in all U. S. Army laboratories. The use of the Presumptive Kahn test may serve to bring the two tests in closer agreement, and perhaps to establish the superiority of the floccular and precipitation tests.

—B. Carl Russum, Omaha.

(1) Schwartz, S. C.: A Comparison of the Wassermann and Kahn Tests by Means of a Quantitative Method, J. Lab. and Clin. Med., 16:197, 1930.

GROUP PURCHASE OF MEDICAL CARE

That economies have been effected through a group-purchase system of medical care in a typical American industrial community of 10,000—Roanoke Rapids—was disclosed in a report made public by the Committee on the Costs of Medical Care. Those participating in the system received a much larger volume of medical service than they could afford through the conventional fee-for-service form of payment, the survey showed.

The report of the survey of "A Community Medical Service Organized Under Industrial Auspices in Roanoke Rapids, North Carolina," by I. S. Falk, Ph. D., Don M. Griswold, M. D., and Hazel I. Spicer, published by the University of Chicago Press, is the twentieth study completed by the Committee on the Cost of Medical Care which on November 29th of this year will make public its final report with recommendations based on its five-year study of the problem of "providing adequate, scientific medical care to all the people, rich and poor, at a cost which can be reasonably met by them."

The report describes the organized medical service in Roanoke Rapids which furnishes medical care to two population groups of approximately the same size: one group through a plan involving fixed periodic payments, by the participants; the second group, through the conventional fee-for-service system of payment.

Small fixed periodic payments, supplemented by funds from employers which pay the salaries of physicians and visiting nurses, have enabled the first group, mill workers and their dependents, with an average income of $1,274 per family, to obtain more medical service than is ordinarily obtained by families with incomes of $10,000 and over, according to the report.

Through economies resulting from this group-purchase plain, the report brings out, the participating mill workers and their families received medical service worth $129,889, based on prevailing local rates, at an actual cost of $92,083, a saving of 29 per cent. This computation is based on figures for 1930, the year studied by the authors of the report.

During the year of the survey, the salaries of five physicians and three visiting nurses were paid by the employers, and each of the workers participating in the plan contributed 25 cents per week, which was deducted from their wages. Through the payments from these two sources, the workers and their families were entitled to medical attention at the doctors' offices or at home, toward accommodations in the local hospital for such periods as might be necessary, and to the services of the visiting nurses, who provided both nursing care and health instruction.

The group of the population not participating in this system of group-purchase of medical care were served by the same practitioners and the same hospital but paid for whether services they obtained on an individual fee basis.

A comparison of the medical care received by these two groups, reveals the following significant facts, according to the report:

1. Those eligible to medical care under the group-purchase plan received a far greater volume of medical service than did those who paid for their medical care individually. Families eligible under the group purchase plan used the local hospital five times as frequently as those in the non-participating group; received four times the number of office treatments; three and a half times the number of home treatments; and the benefits of the services of the visiting nurses, who were scarcely called upon by the non-participating group.

2. Among the non-participating group, the costs of medical care to the individual varied enormously, while among those benefiting from the group-purchase system the costs were evenly distributed. Two per cent of the non-participating families paid nearly 40 per cent of the total cost of illness in their entire group, while a small number of families, comprising less than five per cent of the group were forced to bear approximately 68 per cent of the total burden of medical costs for their group.

Although the services are rendered at low cost, physicians were well compensated. The net incomes of the Roanoke Rapids physicians averaged $8,409 for the year of the study, compared with net incomes of $5,400 to $6,300 for physicians in cities of similar size in other parts of the United States.

The medical care furnished by the Roanoke Rapids medical service was, according to the authors' estimation, of high quality. Their conclusions are based on the following facts:

1. Medical care in that community was highly regarded by the population served and by physicians in the surrounding territory.

2. Death rates and sickness rates were low as compared with similar southern mill cities.

3. Favorable personal observations on the part of both the field workers who made the survey and the medical and surgical authorities consulted. "The desirable personal relation between physician and patient has been scrupulously and completely sustained," the report states.

The authors point out, however, that certain inadequacies existed in the Roanoke Rapids medical organization. They consider that the absence of dental care and the fact that the dispensing of drugs and medicines is not included in the scope of the system are serious shortcomings. Also, they point out that the development of the system was hampered by the financial limitations of the community.

Under the organized service, the per unit cost for the service was comparatively low for both the participants in the group-purchase plan and the non-participating group. In 1930, the average cost of providing for a patient in the hospital was $2.92 per day. The cost of the average ambulatory sickness, including the physician's services was $1.11 and the cost for a visiting nurse's home call was $0.86.

These low costs are attributed by the authors to the following factors:

1. The hospital facilities were not in excess of local needs. This is shown by the fact that during 1930, the local institution operated at an average occupancy of 74 per cent, while the average occupancy rate in other general hospitals of comparable size was only 61 per cent.

2. The location of the physicians' offices in the hospital building effected economies in over-

head expenses by the common use of building, auxiliary equipment and assistant personnel for both in- and out-patients and permitted the physicians to serve all patients with a minimum loss of time in travel. Thus overhead expenses were 18 per cent instead of the 40 per cent ordinarily consumed by professional expenses in private practice.

3. Provision had been made that physicians were occupied to reasonable capacity so that medical personnel was able to serve at least twice as many and perhaps three or four times as many patients as they would serve if practicing in the customary individual manner. Patients had been educated and had become accustomed to receiving service at prescribed hours.

SOME PROBLEMS FOR THE AMERICAN RED CROSS

Problems of grave and far-reaching menace confront the American Red Cross today. In her capacity as national disaster relief organization she is struggling for the solution of the unemployment menace. Approximately two-thirds of her nation-wide machinery of Chapters and Branches are already dealing with this question. Job campaigns, Red Cross work shops, vacant lot and community gardens, with the ever-present necessity of providing food and clothing for those perilously near the bread line are calling for all the training and idealism which 50 years of service to humanity has inculcated in the Heart of the Greatest Mother.

Yet the Red Cross—which is the articulation of the impulses of generosity and compassion of the people of the United States—does not quail before the tasks that lie ahead. "As thy day, so shall thy strength be," might have been written of the Greatest Mother. who in the discharge of her obligations has had the assistance of one of the mightiest armies of consecrated volunteers the world has ever seen. Without them she could not have kept from tens of thousands of thresholds the grim spectres of want and disease.

Their selfless and untiring labors have made possible the investigations, the detail of relief, and the follow-up work which are necessary in hundreds of communities to keep up the courage of the faint-hearted and to build up the strength of those who have so long been the victim of malnutrition. The story of these local men and women, who day after day, left their own affairs in order to help their needy neighbors, is one of the epics of America. To enumerate the types of service they have given; the specialized skill which professional people have made available, would be to exhaust the catalogs of industries and vocations.

Physicians, dentists, oculists and other specialists have conducted free clinics; an army of 750 Red Cross nurses has helped in the detail of their administration and given nursing and maternity care to thousands of women and children who must otherwise have lacked it. Often these Red Cross missionaries of health have been the only representativs of any welfare agency in remote and underprivileged communities. Their contribution in carrying forward the health-education programs of the American Red Cross through classes in Home Hygiene and Care of the Sick has raised the level of living standards and promoted both family and community hygiene as perhaps no other influence ever exerted among our people.

Hot lunches and milk, provided by local Chapters and the Junior Red Cross in hundreds of schools, have supplemented the scant rations of thousands of little ones whose fathers were jobless.

Life-saving and First Aid courses, sponsored by the Red Cross, have so cut down the toll of deaths from drowning, and reduced accidents that a constantly increasing number of industries are making such instruction compulsory among their employes.

Under the many-branched Volunteer Service of the Red Cross, directed by Miss Mabel T. Boardman, two-fold blessings have blossomed forth in every community where the Red Cross is known. Women longing for a means to serve their fellows have found in the variety of opportunities thus opened to them a larger life; the beneficiaries of these efforts have been rehabilitated and helped back to normalcy again.

During the Roll Call period, from Armistice Day to Thanksgiving, the American people are asked to endorse the nation-wide humanitarian program of the Red Cross by renewing their membership dues. Their dollars help to finance these works of mercy and relief.

TUBERCULOSIS HINT. NO. I

All of the effects in mortality reduction of modern refinements in treating advanced cases, especially by surgery, are insignificant compared with the effect of the prompt recognition and adequate treatment of one single early case.

—Miles J. Breuer, Lincoln.

DERMATOLOGIC HINT. NO. IX

The earlier syphilis is treated the better the prognosis, but no case should be treated without proving the diagnosis.

—Donald J. Wilson, Omaha.

OBSTETRICAL AND GYNECOLOGICAL HINT. NO. IX

No undiagnosed abdominal tumor should be tapped, for if it is malignant, the chances of achieving a cure are almost nil. If possible ovarian tumors should be removed intact in order that a spill of malignant contents be avoided.

—Harold S. Morgan, Lincoln.

MEDICO-LEGAL DISABILITIES. NO. III

Traumatic disabilities may be placed in two general classes:

1. Disabilities with no concurrent or contributory disease. This class is not difficult to arrive at a reasonable and accurate conclusion.

2. Disabilities with concurrent or contributory disease. This class is more difficult to arrive at a reasonable and accurate conclusion.

The standard of measure is disturbance of function.

—Czar Johnson, Lincoln.

EDITORIAL PARAGRAPHS

The next Nebraska State Board medical examination will be given November 29-30, State House, Lincoln.

Weinstein and McHugh (*Medical J. and Record,* June 1, 1932), report 1,000 cases of spinal anaesthesia without a death.

Carbon dioxide has been added to the long list of remedies for hiccough and is said to be a very satisfactory remedy for this condition.

It is stated that about 1,100 applications were filed for admittance to one of our medical colleges this fall that could admit but 100.

The Pan-American Medical Association will hold a meeting at Dallas, Texas, March 21-26, 1933. This will be the Fourth Congress.

A medical survey of Omaha and Douglas county is to be made shortly under the direction of the United States Public Health Service.

The recent development of a glass wool pollen filter has made it possible to imitate the ragweed free atmosphere of the resort and to place patients in pollen-free air for a specified number of hours, allowing them to go out during the rest of the time into ordinary city air in pursuit of their daily activities.

The first successful operation in America under spinal anesthesia was performed December 18, 1899, by Matas. The patient, a young Negro with hemorrhoids, received two injections of one cc. of one per cent cocaine in normal saline, five minutes apart. There was complete anesthesia from the waist down, and the patient made an excellent recovery.

At a recent meeting of the Eighth Councilor District Medical Society a resolution was passed in opposition to the Workmen's Compensation act "because it does not work for the best interests of either the patient or the medical attendent." The society favored repeal of the law. The attitude of the Nebraska profession toward the Compensation act is requested.

The idea of hyphenating component medical societies developed within recent years by the Madison-Six County Medical society has prompted the formation of a number of similar societies in other parts of the state, notably two formed during the current year. The idea is a good one and should be encouraged. Sustained interest cannot be expected in medical society work without a sufficient number in attendance to make it interesting and worthwhile.

Renewed interest has been aroused by some recent studies in England in the famous Lamarck hypothesis which holds that in the process of natural selection acquired capabilities can be transmitted to offspring. In other words that a person who works hard enough to become a better man can somehow transmit some of this acquired character to his children.

Under an organized medical service, young men and women of the age and type of the college student can be provided with comprehensive medical care at a cost of from $14 to $24 per capita, annually. This estimate is based on a study of the costs for the school year of operating organized student health services in four state universities—Michigan, Minnesota, California, and Oregon State Agricultural College—contained in a report made public by the Committee on the Costs of Medical Care.

An esteemed friend reports the following strange case from Philadelphia: A colored woman and child entered a street car, the child having on its head an inverted chamber vessel. To the astonished passengers the mother explained the child had fallen head foremost into the vessel and she could not remove it and was taking the child to the doctor to get it taken off. At each stop other people entered the car and the mother explained afresh the dire predicament, apparently rather enjoying the distinction of herself and her son. Strange things do happen, even in Philadelphia.

The annual meeting of the Washington State Medical Association in the middle of September was devoted wholly to a program on medical economics and public health and one wonders whether this would not make a good program for our own annual meeting. Addresses were made by Dr. Ray Lyman Wilbur; Dr. Joseph A. Pettit, Trustee of the American Medical Association; Dr. Nathan Sinai, on The Health Problem of the Industrial Worker; Dr. R. G. Leland, Chairman of the Bureau of Medical Economics of the A. M. A., on Some Economics of Medicine; Dr. Nathan Sinai on Health Insurance; besides as many others. Medical organization in the State of Washington is taken seriously.

Dr. Frank Billings, internationally known physician and one of the foremost internists of all time, died in Chicago, September 20. He was President of the American Medical Association at the time of its reorganization and subsequently was, in succession, Treasurer and Secretary and a member of the Board of Trustees. He was at different times on the faculty of the Northwestern University Medical School and of Chicago University—and was dean of the latter. He introduced laboratory work and the theory of focal infection into this country. His entire life was one of unselfish service. He it was who pronounced the dictum that 85% of cases of illness could be handled by the general practitioner and he prided himself in being a general practitioner. He was a man easily approached and one of nature's noblemen.

The United States Public Health Service advises all persons to avoid contact with recently shipped or acquired birds of the parrot family. Several cases of psittacosis, or parrot fever, are being reported in various parts of the United States. Reports of 5 cases and one fatality have recently been received from Minneapolis, Minn. Another case has been reported from Boise, Idaho. There have been 12 cases of parrot fever, with 6 deaths, reported in California between December 1, 1931, and February 10, 1932. Upon the recommendation of the Public Health Service, the Secretary of the Treasury has recently issued an order amending the interstate quarantine regulations so as to limit the interstate transportation of birds of the parrot family by common carriers to those certified by the proper health authoritiy of the state as coming from aviaries free from infection.

The Nebraska State Bureau of Health issues the following suggestions: Diphtheria antitoxin is used primarily for treatment of the person having the disease. It does not possess the properties required to develop immunity. Temporary protection against diphtheria is secured by giving the exposed person a prophylactic or protective dose of diphtheria antitoxin. This protection lasts at the most for but a few weeks and is classified as an emergency measure. Toxin-antitoxin and toxoid are preparations used for the purpose of developing immunity against diphtheria. The administration of either is in divided dosage of very small amounts, usually two to three treatments at intervals of a week. This immunization process does not confer immediate immunity but requires several months for development. The response is more prompt when toxoid is used and this preparation is preferably for use in those of the age group six months to six or eight years.

Toxoid may be used in older groups, though the toxin-antitoxin is the more common treatment.

NECROLOGY

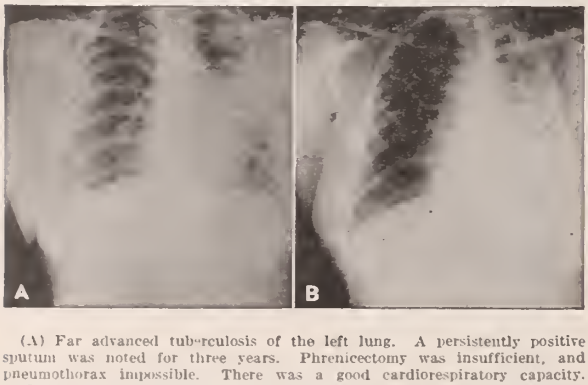
James R. Kalar, Anselmo, Nebr.; College of Physicians and Surgeons, Keokuk, Iowa, 1903; practitioner at Anselmo for twenty years; died after an illness of several years, September 18, 1932.

Morris H. Evans, Emerson, Nebr.; native of Reynoldsburg, Ohio; Columbus Medical College, 1884; practitioner in his native town for three years and since then for a period of forty-five years a practitioner at Emerson; a pioneer physician of wide acquaintance and much in demand in a wide territory; a man of wide influence in his community, interested in the political and social welfare; member, Nebraska State Medical Association; died September 19, 1932, of carcinoma of the bladder, aged about seventy-six years. A widow survives.

Andrew J. Jenison, Fairfield, Nebr.; State University of Iowa College of Medicine, 1895; practitioner at Clay Center and Harvard for thirty-five years until ill health compelled retirement; member until recently, Nebraska State Medical Association and twice chairman of the house of delegates; member of Nebraska house of representatives 1907 and 1917 and once speaker of the house; sometime postmaster of Harvard, Nebr.; very active in civic affairs of his community; died after an illness of several years, October 6, 1932, aged about seventy years. He is survived by a widow.

TUBERCULOSIS ABSTRACTS

While tuberculosis has long been regarded as essentially a medical problem, surgery has made an outstanding place for itself in the treatment of this disease. Artificial pneumothorax is widening in use, as its indications become more definite. Phrenico-exeresis and the cauterization of pleural adhesions to facilitate pneumothorax are established procedures. Thoracoplasty, or the extrapleural removal of portions of the ribs, still has its risks but is of undisputed value in well selected cases. Dunham and Asbury, in the Journal of the American Medical Association, July 30, 1932, discuss some general and economic considerations of thoracoplasty. Excerpts of this article of interest to the general practitioner follow.



(A) Far advanced tuberculosis of the left lung. A persistently positive sputum was noted for three years. Phrenicectomy was insufficient, and pneumothorax impossible. There was a good cardiorespiratory capacity. (B) Appearance after thoracoplasty; sputum has since been negative continuously. Complete recovery occurred.

THORACOPLASTY IN PULMONARY TUBERCULOSIS

Most of the literature on surgery in pulmonary tuberculosis has been written either by surgeons or by internists without mutual collaboration. Too frequently the surgeon does not have the "feel" of the case which the internist develops from his longer contact with the patient. The internist, on the other hand, may beguile himself into over-conservative methods. The cooperative effort of internist and surgeon, based on their combined medical and surgical experience is probably the best arrangement. It is regrettable that for such cooperative work facilities in personnel and equipment are lacking in most sanatoria as well as general hospitals.

Brown reported that, after nine years, eight of thirty-six patients on whom thoracoplasty had been performed were dead, while the remainder were either working or clinically well. These patients averaged less than a year of treatment after operation. Nine patients were followed who had been advised, but who had refused, operation. Six were dead, two were still under care, and one had recovered after five years of institutional treatment. Those who died averaged five years of care in a public sanatorium after the operation was refused. These figures are probably applicable to all institutions.

ECONOMIC PHASES

Certain tuberculosis patients live in a bed-ridden condition for years. They are a potential source of infection to all who come in contact with them. It is estimated that this group, though comprising a small percentage of the total number of patients, accounts for from 25% to 50% of the patient-days of most sanatoria. A great saving would result were the sanatoria to be relieved of these chronic cases. Patients on whom a thoracoplasty should be done are mostly in this group. In the Hamilton County (Ohio) Tuberculosis Sanatorium patients are constantly examined by the internist and the attending chest surgeon, and those for whom surgery is indicated are removed to the Cincinnati General Hospital and returned after operation. The authors suggest a modification of this plan for all counties or sanatoria.

SELECTION OF PATIENTS

Why and when are surgical measures valuable in pulmonary tuberculosis? Spontaneous cures of the disease have been effected for centuries. Indeed, the natural tendency of tuberculous processes is toward healing. Rest in bed to reduce the depth and number of respirations and the circulatory activity, and to build up the general resistance is still our greatest aid in any case. Rest in bed constitutes the accepted treatment in most cases, either because the lesions are minimal or because both lungs are involved, contraindicating collapse therapy. If only one lung is actively involved, some form of collapse therapy should be considered, but it cannot be used in all cases.

The simplest form of collapse therapy is artificial pneumothorax. Pleural adhesions may prevent the introduction of air; or this method may have to be abandoned when adhesions cannot be further stretched or when new adhesions form. The adhesions attached to the chest wall hold open cavities, which jeopardize the uninvolved lung of the patient and the safety of every one in contact with him. In certain cases, adhesions may be divided by the Jacobaeus or open method, so that pneumothorax can be continued. If the adhesions are widespread and cannot be cut, or if a pure tuberculosis empyema occurs, thoracoplasty must be considered.

Why do we do thoracoplasty? Primarily to do away with positive sputum. The field for thoracoplasty is limited to cases of involvement of one lung which show evidence of cicatrization, but in which the cavities are not closing and persistently positive sputum is found. Toxicity, as evidenced by fever and a rapid pulse rate, should be absent. The general condition of the patient must be favorable, although arrested lesions in the opposite lung, as well as secondary lesions, are compatible with collapse therapy.

The way to determine whether the patient can stand a major operation is to observe his effort syndrome. Although contraindicated in the average case, for purposes of such observations, the patient is got out of bed daily, the time and amount of exercise is gradually increased, and a record is kept of the rise in pulse and respiratory rate and the amount of dyspnea. The length of time required for the return to normal is noted. Other methods of investigating the heart should not be neglected. Cyanosis is a positive contraindication to surgery. Thoracoplasty will affect the bedridden patient as would a 50 yard dash.

COMMENTS ON TECHNIC

Phrenico-exeresis is done either in conjunction with thoracoplasty or as an independent procedure. If the patient has a one-sided lesion and pleural adhesions which cannot be cut, and if he is too toxic for more radical procedures, phrenico-exeresis is done. Owing to the 15 to 25 per cent compression of the lung from raising the diaphragm and the lessened excursion of the lung, further surgery may not be needed if the sputum becomes negative. As a rule, some improvement occurs. If there is doubt as to the condition of the good lung, phrenico-exeresis serves as a test and a preparation for thoracoplasty, and can also be used after thoracoplasty when further collapse is needed to obtain negative sputum.

The preoperative preparation, the surgical technic and the post-operative care are lucidly described in the original article. Portions of at least ten ribs are removed subpriosteally as close to the transverse processes as possible in two stages. At the first stage the fifth to the eleventh ribs are removed. The second stage must not be unduly delayed since new bone forms quickly from the periosteum, but infection, such as acne or stitch abscesses, and wound drainage must be cleaned up before it is attempted. All possible speed and skill are desirable but gentle handling of the tissues is essential.

For two years the authors have been using acacia solution intravenously to combat the severe postoperative shock. This has the advantage of safety and convenience for it may be used on a moment's notice through a very small needle. The cost is trifling. An ingenious but simple "infusion radiator" for the purpose has been devised by a sister of the Good Samaritan Hospital.

"The only criterion of a successful thoracoplasty is a living patient with continuously negative sputum."

In one series of patients 35% had continuously negative sputum beginning two weeks after the operation and all but two of the remainder had consistently negative sputum after a period from two to nine months. In another series 40% showed negative sputum at once after operation and 40% negative sputum after a period averaging seven months. All patients who had negative sputum after operation recovered, while those who continued to have positive sputum either remained sick or died.

Thoracoplasty in Pulmonary Tuberculosis, Kennon Dunham and Eslie Asbury.—Jour. A. M. A.—July 30, 1932.

AUXILIARY NOTES

President Roeder has appointed the following committee chairmen:

Hygeia, Mrs. Paul Siman, Wayne; Organization, Mrs. H. R. Miner, Falls City; Public Relations, Mrs. Harry Flansburg, 2301 Lake St., Lincoln; Publicity, Mrs. W. H. Stokes, 131 S. 39th St., Omaha; Budget, Mrs. Lucien Stark, Norfolk; Revisions, Mrs. John R. Nilsson, 1325 N. 33rd St., Omaha; Legislative and Program, Mrs. Chas. W. Pollard, 301 S. Happy Hollow Blvd., Omaha.

Six County Auxiliary had a meeting recently. Mrs. F. X. Rudloff of Battle Creek was elected president, and Mrs. R. A. Frary of Stanton, secretary. They voted to hold only four regular business meetings during the year—the other eight to be optional as to the kind of entertainment. They meet on the evening of the regular monthly meeting of the doctors, and have dinner with them. If the meeting looks interesting to them, they stay; otherwise, they pursue other lines of entertainment usually provided by the hostesses who are the wives of the doctors in charge of the medical meeting.

* * * * * *

The Richardson County Medical Auxiliary had their dinner with the Medical Association at the Falls City Country Club on September 20th. After dinner the Auxiliary held their regular business meeting at the home of Mrs. Miner. On September 26th four members of the Auxiliary had luncheon with the Brown County Auxiliary at Hiawatha, Kansas. Mrs. Freeman gave a very interesting talk.

* * * * * *

Mrs. Clyde Roeder, our State President, has been appointed one of a committee of five on the National Program of which Mrs. H. R. Miner of Falls City is Exhibit Chairman.

* * * * * *

Dr. H. J. Lehnhoff of Lincoln has been appointed chairman of the Advisory Committee to the Auxiliary.

* * * * * *

National Auxiliary officers are: President, Mrs. Walter Jackson Freeman, Philadelphia, Pa.; President-Elect, Mrs. James Blake, Hopkins, Minnesota; Recording Secretary, Mrs. Sherman S. Hesselgrave, St. Paul, Minn.; Corresponding Secretary, Mrs. Henry F. Page, Philadelphia, Pa.; Treasurer, Mrs. Robert W. Tomlinson, Wilmington, Delaware.

* * * * * *

The Woman's Auxiliary to the Omaha-Douglas County Medical Society is planning a party to be held at the Fontenelle hotel on election night. A special leased Morse wire will be installed to the eighth floor and an operator present who will flash the election returns to the crowd on the instant in which they are received. Card tables will be arranged for those desiring to play and a late buffet supper will be served. At midnight headliners from the current Orpheum bill will contribute acts to the general entertainment.

This affair will be a benefit for the school nutrition fund to which the Medical Auxiliary contributes yearly. The money raised from the sale of tickets will be turned over to Mrs. Millard Langfeld whose work in distributing free milk and lunch to undernourished children of parents unable to pay for proper food is well known. This year the need will be especially great and the Auxiliary is hopeful of being able to add materially to the fund.

Officers of the Omaha-Douglas County Medical Auxiliary are: Mrs. C. C. Tomlinson, president; Mrs. Rudolph Rix, vice president; Mrs. Herbert Davis, secretary-treasurer. Directors are Mrs. H. B. Hamilton, Mrs. Ernest Kelly, Mrs. Clarence Rubendall, and Mrs. Paul Ellis.

The Election Party is in charge of the Medical Welfare Committee of which Mrs. Frank Conlin is chairman and Mrs. Herman Jahr, co-chairman.

* * * * * *

In her presidential address before the National Auxiliary, Mrs. Walter Jackson Freeman, said in part:

"This understanding of our position and opportunity is particularly encouraging in a small community. There are a few national organizations, such as the Parent-Teacher Associations, the American Legion

Auxiliary, and the Federated clubs, so widespread in their ramifications that some one of them touches the life of nearly every educated woman in the country. By her membership in one or another, and by her daily personal contacts with her friends and neighbors, she can if she will make the Auxiliary a powerful health educator in the community.

"We hear much of the inevitable sacrifices of the doctor's wife, only too well known to us all, but what of her rewards? Here again the Auxiliary has the answer. Not only does it offer her unrivalled opportunities for the service of humanity, but by that very service a new bond of sympathy and understanding is created between the doctor and his wife. Again and again do I find mention in the medical journals from all parts of the country of the new interest in their husbands' work taken by Auxiliary members, of their better understanding of the imperative demands made on a physician, of his greater responsibility as his brother's keeper because of his greater knowledge and skill. There is less jealousy of his profession, less resentment at its demands, greater harmony in the home, and the doctors are not slow in voicing their appreciation of this changing attitude.

"And, so, as the fourth and chiefest of the thoughts I want you to bear in mind throughout the year, I offer you the great prize of happiness, the knowledge that work in the Auxiliary makes for harmony in your home and draws you and your husband ever closer together."

THE SOCIETIES

About thirty-five physicians and their ladies attended the September meeting of the **Madison Six County Medical Society** at Norfolk on the evening of the 20th. Following dinner the following program was given:

"A Consideration of Some of the Common Acute Surgical Conditions," Dr. J. W. Duncan, Omaha.

"Coronary Artery Disease," Dr. M. C. Howard, Omaha.

Outstanding points in Dr. Duncan's paper were condemnation of spinal puncture to relieve intracranial pressure since the withdrawal of fluid is immediately followed by the effusion of more fluid and gives relief for but a short time. Dehydration by magnesium sulphate solution or by 50% glucose is preferable. Acute abdominal conditions frequently offer difficulty in diagnosis. In perforated ulcer the patient lies quiet; in gallstone colic he throws himself about. After all the niceties of laboratory diagnosis have been called into play, clinical judgment must not be overlooked.

Dr. Howard discussed coronary artery disease and showed a number of slides to elucidate the text.

The October meeting of the **Madison Six County Medical Society** was held at Norfolk on the 13th following a dinner. About forty physicians and their ladies attended. Dr. C. C. Tomlinson, Omaha, read a paper on "Dermatitis Exfoliative." (To be published in the Journal).

Dr. George Hansen, Madison, presented a case report and exhibited specimen of superfetation, one fetus in age approaching four months and the other about thirty days. The Lilly people showed a movietalkie on "The Story of Insulin" which was very interesting and also very long—one and one-half hours.

The **Southwest Medical Society,** comprising seven counties, met in Stratton, September 8. A noon luncheon was attended by thirty physicians and their wives. This was served by the local Woman's club in the banquet room of the community hall and the afternoon program was held in the library room. Dr. Adolph Sachs, Omaha, specialist in internal medicine, delivered a lecture on "Malignant Sore Throat." Dr. Bruce Eldrege, Omaha, child specialist, talked on "Intravenous Treatment of Children." In the evening a social function concluded the program. Many of the doctors wives were guests at the meeting.

The **Sixth Councilor District Medical Society** held its October meeting at Wahoo, following a dinner at the Methodist church. This recently organized society promises well as indicated by the program:

"Adult Pneumonia," Geo. Pratt, M. D., Omaha, discussion by George Covey, M. D., Lincoln; "Infantile Pneumonia," H. B. Hamilton, M. D., Omaha, discussion by R. B. Eldredge, M. D., Omaha; "Presentation of Fatal Case in 9 Months Infant—With Lung Abscess and Brain Abscess," Drs. C. W. Way and M. E. Lathrop, Wahoo, discussion by R. B. Eldredge, M. D., Omaha; Discussion, Neurological Findings, E. E. Bennett, M. D., Omaha.

The **Richardson County Medical Association** and the Ladies' Auxiliary held a dinner at the Falls City Country club, September 20, at 6:30 o'clock with a number of out of town doctors present. The dinner was preceded by golfing over the Country club course. A paper was read by Dr. Lewis Moon of Omaha on "Anal Fistula." It was illustrated by lantern slides. Dr. R. W. Fouts of Omaha gave a lecture on "Fractures."

A joint meeting of the **Nebraska Tuberculosis Association** and the **Ninth Councilor District Medical Society** was hld at the State Hospital, Kearney, October 11, with about seventy-five physicians in attendance. Dr. B. R. McGrath, Grand Island, read a paper on "Pulmonary Emboli" and the complications caused in major surgical operations. Dr. L. M. Stearns, of Kearney, read the second paper, on "Reminiscences of a Post Graduate Tour." Dr. Arthur Myers of Minneapolis, spoke on "Tuberculosis in Children," and Dr. J. W. Duncan of Omaha reviewed the value of nerve operations in treatment of pulmonary tuberculosis. Dr. John F. Allen of the program committee, said a number of papers which had been prepared could not be given for lack of time.

The **Dawson County Medical Society** sponsored a popular lecture at the Cozad high school auditorium, October 3, by Dr. Ernest Kelly, Omaha, on "Child Psychology and Adult Nervousness."

HUMAN INTEREST TALES

Dr. R. G. Rich, David City, has been seriously ill lately.

Dr. M. Mesropian, recently of Story, has located at Dixon.

Dr. C. T. Gritzka, Talmage, suffered a broken leg recently.

Dr. S. T. Bayliss, formerly of Omaha, has located at Hershey.

Dr. Theodore A. Peterson, Holdrege, is opening a private hospital.

Dr. P. E. McGowan, Schuyler, spent some time fishing in Minnesota.

Dr. C. G. McMahon, Superior, spent several weeks at the Mayo clinic recently.

Dr. Eleanor Hamilton, New York City, visited her mother in Omaha, in September.

Dr. Robert Lee, for some time located at Ravenna, has moved to Fort Collins, Colo.

Dr. H. M. Robbins and family, West Point, visited in Columbus, Ohio, in early fall.

Dr. W. F. Novak, Clarkson, has returned from six months of study in Vienna and Prague.

Dr. Martin Miles from Denver has located at Alliance in association with Dr. H. A. Copsey.

Dr. and Mrs. Homer Davis, Genoa, visited their son and other relatives in Los Angeles, recently.

Dr. A. J. Schwedhelf, Creighton, has gone to Philadelphia to take a two years' course in surgery.

Dr. Fred J. Schwertly is now head of the department of anatomy of Creighton Medical College.

Dr. J. C. Malster, Stromsburg, was seriously injured in an auto upset the last days of September.

Dr. King Palmer, and family, Holdrege, spent a vacation at Red Feather and other Colorado points.

Dr. B. F. Lorance, Auburn, recently spoke before the Peru Kiwanis club on "The House We Live In."

Dr. G. E. Charlton, superintendent of the Ingleside State hospital, was reported seriously ill last month.

Dr. O. F. Wilmeth, who several weeks ago left Hershey to locate in Superior, has returned to Hershey.

Dr. and Mrs. Lucien Stark, Norfolk, made a ten-day trip into western and southern Nebraska in September.

Custer county has employed a school nurse and all the school children of the county are being examined.

Dr. A. E. Stuart, Cedar Bluffs, sustained serious injuries about the head and face in an auto collision recently.

Dr. Charles F. Mayer, Burr, returned to his home the first of October after a month of hospitalization in Lincoln.

Dr. Max Flothow, Omaha, received a bullet wound in the thigh at the hands of a bandit he resisted early last month.

Dr. Victor E. Levine, Omaha, spent most of the summer doing research work at the School of Hygiene and Public Health of Johns Hopkins University.

Dr. F. G. Dewey, Coleridge, suffered a compound fracture of an arm, and head and chest injuries in an auto upset on his way to Nebraska City, October 1st.

Dr. W. E. Wright, former well known Kennard physician, has located at Creighton in succession to Dr. Schwedhelm, who has gone to Philadelphia for special study in surgery.

A physician's medicine case stolen from Dr. A. P. Synhorst of Grand Island, September 21, was recovered several weeks later when a couple was arrested for auto theft. The bag was found in the car.

OBLIGATIONS OF THE MEDICAL PROFESSION

In the President's address before the American Medical Association at the Eighty-Second Annual Session, Philadelphia, June 9, 1931, E. Starr Judd, Rochester, Minn. (*Journal A. M. A.,* June 13, 1931), stated that the medical profession can help society a great deal by utilizing every effort at its command to educate people along medical lines. The idea of medical education for the public is not a new one, but the importance of it is more fully realized now than it was in former years. Every physician can do his part in this work in his visits and contacts with his patients. If this personal contact with patients is not carried out in an interesting, enthusiastic and educational manner, the physician is not fulfilling his professional obligations. There are many ways in which information concerning medical facts may be given to the public that are certain to be helpful in establishing a more confident and intimate relationship between the public and the profession. Public health and other medical lectures sponsored by county medical societies should be one of the important obligations of the county society. These lectures may be abstracted and published in the daily press. Under the supervision of the secretary or other officer or committee of the medical society, all medical news at his command should be made available to the press. The press has shown itself willing and anxious to publish this information and to cooperate with the profession in every way. The radio as a means of disseminating medical news and information in which the public is interested, and about which it should know, is being employed extensively, and undoubtedly it will be used more. Properly regulated and controlled by medical societies and their officers, this plan of giving out medical facts is certain to lead to results of great value. Those who control the radio corporations are overwhelmed with applications for time on their programs to broadcast quack remedies and cures, and they are anxious to know what should be accepted and what should not. It is one of the obligations of the medical profession to give them this information. The consensus among members of the medical profession generally is that some sort of publicity should be supplied by which the public will be made to understand the nature, the purposes and the results of the efforts made by scientific medicine for prevention and control of disease. The profession of medicine is under obligation to protect the public from unsound programs as much as to see that it is informed on the proper principles. A committee on public relations composed of members who have made studies of these problems, and who appreciate the obligations of the profession to the public, is a valuable part of a state organization. The organization of all medical activities in each state, so that the public health association, state medical association, and all other associations and auxiliaries are under the one head helps greatly to coordinate all medical activities. This scheme brings the medical profession as a whole into the leadership of all activities pertaining to medicine within the state. It is not only the privilege of the profession to assume this leadership, but it is also its solemn obligation to direct all medical activities. Society must be made to realize that organized medicine is perfectly able to control and operate its affairs without the help of the government or other outside organizations and that it can do so to the advantage of every one concerned. It is the obligation of the profession to continue studies to help to establish itself in its proper place in relation to the local, state and national government. All physicians must realize that an organization that is responsible for the health and lives of so many individuals each year and that is economically responsible for the expenditure of so much time, energy and money has a large responsibility and obligation.

GONOCOCCAL BACTEREMIA IN WOMAN WITH CURE BY SURGICAL INTERVENTION

John H. Garlock, New York (*Journal A. M. A.*, Oct. 3, 1931), calls attention to the fact that in May, 1930, Wheeler and Cornell reported from the First Surgical Division of the New York Hospital a case of gonococcal bacteremia cured by operation. This probably represents the first case of its kind in surgical literature. Soon afterward, a patient presenting a similar condition was admitted to the Second Medical Division of the New York Hospital, and her case forms the basis of the author's communication. A detailed description of the illness of this patient is appended, because it was felt that the problem which presented itself is of considerable importance and that its solution opens up a new field in the therapy of this disease. On the basis of his observations in this case the author draws the following conclusions: 1. In certain cases of gonococcal bacteremia in women there may be an intermittent blood stream invasion. At the same time there may be little or nothing in the history, physical examination and clinical course to indicate the presence of a focus in the cervix, uterus or fallopian tubes. 2. The cause of an intermittent bacteremia presumably is a local focus with blood vessel involvement. 3. Operation in such cases should be considered. Timely and appropriate surgical intervention may offer the only chance of recovery.

CHEER UP

If times are hard and you feel blue,
Think of others worrying too;
Don't think the rest of us haven't any.
Just because your trials are many,

Life is made up of smiles and tears.
Joys and sorrows mixed with fears;
And though to us it seems one-sided,
Trouble is pretty well divided.

If we could look in every heart,
We'd find that each one has its part,
And those who travel Fortune's road
Sometimes carry the biggest load.

—Selected.

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CONTENTS

Page
Pathogenesis and Clinical Syndromes, G. Alexander Young, M. D. 505
The Prevention of Intracranial Injury, Willis H. Taylor, M. D. 510
Early Diagnosis and Treatment of Intra-Cranial Hemorrhage in the New-Born, Clyde Moore, M. D. 513
Purpuras, A. S. Rubnitz, A. B., M. D. 518
Traumatic Surgery in a Rural Hospital, Charles G. McMahon, M. D., F. A. C. S. 521
The Pathology, Diagnosis, and Treatment of Tumors of the Breast, Herbert H. Davis, M. D., F. A. C. S. 525
Transurethral Resection of Prostate, Thomas D. Boler, M. D. 528
Superfetation: Case Report, George M. Hansen, M. D. 530

EDITORIAL—

Christmas After All 532
The Report of the Committee on the Cost of Medical Care 532
Volume Seventeen 533
Traumatic Surgery in Rural Communities 533
Page
Annual Clinic Day at Bryan Memorial Hospital 534
A Study of Appendicitis 534
Notes From the St. Louis College of Surgeons Meeting 534
Medical Malpractice 535
A Look at the Postgraduate Medical Assembly 536
Congratulations on a Twenty-fifth Anniversary! 537
Custer County Society Honors Dr. A. L. Mathews: Fifty Years in Medicine 538
Honor to Whom Honor is Due 538
Tuberculosis Hint No. II 539
Obstetrical and Gynecological Hints. No. X 539
Dermatologic Hint No. X 539
Medico-Legal Disabilities IV 539
Editorial Paragraphs 539
Necrology 541
Auxiliary News Letter 541
The Alpha Omega Alpha Honorary Fraternity 542
The Societies 542
Human Interest Tales 544

Symposium on Cerebral Birth Injuries

PATHOGENESIS AND CLINICAL SYNDROMES*

G. ALEXANDER YOUNG, M. D.,
Omaha, Nebr.

According to statistics, approximately 7 to 8% of premature and full term infants are either born dead or die during the first week of life. A large proportion of these deaths are due to injury received during birth. Ehrenfest states that out of every 100 still births or neonatal deaths. between 70 and 80 die from intracranial lesions. The hazard of birth, therefore, may be recognized as one of the greater dangers to which the human being is subjected throughout life. The subject of cerebral birth injuries derives its importance both from the individual and the social point of view. The infant stands to lose its life, and if not that, runs the risk of those tragic sequelae of birth injury, the spastic paralyses, the athetoses, the epilepsies and the various grades of mental retardation and enfeeblement. Society also suffers in the economic burden which the care of these unfortunate cases imposes upon it.

The problem of birth injury constitutes a challenge to medical science as to the best ways in which prevention and treatment may be carried out. That medicine has been responsive to the challenge is evident in the voluminous literature that has accumulated in the last twenty years. My own interest in the subject has been stimulated by my feeling of helplessness when paralytic, retarded or epileptic children have been brought to me in whom the organic and incurable brain lesions have been due to a trauma of birth and wherein encephalographic films have graphically shown the cortical atrophy or arrest of development. It has been the thought of the readers in this symposium that a concise presentation of the pathogenesis, diagnosis, prevention and immediate treatment might be of interest and value. We have wished to emphasize particularly the need of immediate and rational treatment based upon an adequate knowledge of the pathology present.

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*Presented before annual meeting Nebraska State Medical Association, Lincoln, May 24-26, 1932.

PATHOGENESIS

A review of the extensive literature of the last ten years shows at least three distinct pathological processes at work which may result in death or in disabling neurological syndromes. These are, in order of their importance, hemorrhage, stasis, and edema.

Hemorrhage: The cerebral hemorrhage of the new born is venous in origin. It results from the laceration of the dural folds or sinuses, or from laceration or rupture of the cerebral veins. The amount of bleeding may be gross, or minute as in the case of punctate intracerebral and intramedullary hemorrhage. The locations of the hemorrhage in order of frequency are subdural, subarachnoid, intraventricular and intracerebral. The veins most often torn are the veins of the tentorium and the nearby tributaries of the great vein of Galen, the superior cerebral veins, and the branches of the internal cerebral veins supplying the basal ganglia and the medullary center of the cerebral hemispheres. The causes of the hemorrhage are aptly given by Yagi(1) as excessive molding of the head, stasis due to prolonged labor, asphyxia or to kinking of the vein of Galen at its junction with the straight sinus, and to prematurity. All authors agree that prematurity is the greatest factor in the production of hemorrhage by reason of the undeveloped elastic layers of the vessels and poorly differentiated connective tissue elements of the premature fetus.

Chase(2) in a recent important article on subdural hemorrhage associated with tentorial splitting, emphasized the importance of prematurity in the production of hemorrhage. In 32 cases of tentorial splitting carefully examined and analyzed he found no definite relation between the degree of splitting and the amount of hemorrhage. The gross hemorrhage was in all cases subdural. In all but one case it was confined to the supratentorial fossa and appeared to arise from the tributaries of the vein of Galen near its junction with the straight sinus. It was generally bilateral.

Subdural hemorrhage is most apt to be fatal when it is infratentorial and produces medullary compression. It is to be remembered that the vital centers lie between the tentorium and the fourth cervical segment. Subdural and arachnoidal hemorrhage may be sufficiently extensive to occasion death from pressure or in non-fatal cases may result in pachymeningitis, arachnoiditis with adhesions or cyst formation.

Hemsath and Canavan(3) report sixty-four per cent of microscopic hemorrhages in the medulla in 53 unselected new born deaths and still births. In 12 of the 34 cases this finding supplied the only ascertainable anatomical cause of death.

Ylppo(4) found intracranial hemorrhage in 90% of premature infants of 700 - 1000 grams, in 75% of those of 1000 - 1500 grams and 25% of those weighing 2000-2500 grams.

Schwartz(5) has found meningeal or intracerebral hemorrhage or the residua of such hemorrhage in 65% of all children dying at birth or up to five months of age.

Crothers(6) found intracranial hemorrhage in 65% of all still births.

Ford(7) states that in about one-third of all cases of intracranial birth hemorrhage the lesion is extensive enough to cause death. The other two-thirds or approximately 2% of all births represent the clinical cases of birth injury which either recover completely or present the well known neurological syndromes above referred to.

Stasis: Prior to 1924, the literature on cerebral birth injuries dealt mainly with subdural and arachnoidal hemorrhage. But very little mention was made of intracerebral lesions. In 1924, Schwartz(5) of Frankfurt stressed the great importance of stasis and thrombosis of the sinuses and internal cerebral veins which he held was due to the minus pressure or suction effect induced by the difference between the atmospheric pressure to which the head was subjected after the amniotic sac had ruptured and the intra-auterine pressure to which the body of the fetus was exposed. This produced a flow of the body fluids to the point of least pressure and produced not only cephalhematomas but also an intense congestion, stasis and at times a thrombosis of the internal cerebral veins, particularly in the distribution of the great vein of Galen. From the study of a large autopsy material he was able to demonstrate not only dilation, thrombosis and rupture or these tributaries but also discovered, what had previously been overlooked, a more or less wide spread necrosis and fatty degeneration of the subcortical white matter with strand-like and at times extensive secondary hemorrhage. In cases where there were no macroscopic hemorrhages, he was able to demonstrate areas of rarefaction and fatty degeneration in the white matter which would have later resulted in sclerosis and spastic paralysis had the child lived. Another important feature of his work was the discovery that the vena terminalis was particularly prone to thrombosis and to rupture, with injury to the candate nucleus of the corpus striatum and also less frequently to the lenticular nucleus and to the thalamus. It is these lesions which give rise to the choreoathetoid syndrome associated with muscle rigidity so often found among the cases of birth trauma.

Wald(8) in 1930, published the result of a careful study of 127 serially unselected cases of still births and neonatal deaths with particular reference to changes in the basal ganglia and adjacent white matter. He found that the lesions consisted principally of hemorrhages, of fatty degeneration, of areas of softening or necrosis in the centrum semiovale or white matter. In the region of the basal ganglia there were subependymal hemorrhages, especially in the candate nucleus but also in the thalamus, pallidum and putamen.

Of 127 cases there were found lesions of the basal ganglia in 64 and pathological changes in the white matter alone in 22 cases. These findings are in agreement with those of Schwartz's and open new vistas of research in the field of birth injuries. There has been some dispute over the extent of these intracerebral lesions but a majority of the commentators, notably Ehrenfest in his recently published monograph on birth injuries, support Schwartz and his coworkers. Wald and Schwartz both attribute to these intracerebral lesions the origin of many cases of porencephaly, lobar sclerosis, and microcephaly, conditions which hitherto have been generally thought of as prenatal in character.

Holland discredits the suction effect etiology of Schwartz and postulates a stasis in the vena Galenae system due to kinking of the vein of Galen at its junction with the straight sinus, caused by displacement of the brain in relation to a rigid tentorium. Whatever the true cause of the stasis, its discovery and the description of its effects, marks a new epoch in the pathology of birth injuries.

Edema: Brain edema as the result of head injuries of the adult is well known. Seitz(9) in 1912, in a monograph on symptoms of increased intracranial pressure in the new born, describes cases of fatal cerebral contusion and edema without hemorrhage. Cruikshank(10) recently has again stressed the importance of cerebral injury without gross hemorrhage but with cerebral edema which may result fatally. Such cases will show an elevated spinal fluid pressure and are apt to respond favorably to lumbar puncture therapy. It is probable that in them there are diffuse injuries to the cerebral structures with minute hemorrhages.

SPINAL FLUID PRESSURE

The normal spinal fluid pressure in new born children is from 2 - 6 mm. Hg. Munro(11) investigated the spinal fluid pressure in 95 cases of birth injury. Of these 56 survived and 39 died. The average pressure of those living was 10.9 mm. and of the fatal cases 11.1 mm. He states that in the absence of surgical shock or dehydration the spinal fluid of all cases of massive meningeal hemorrhage will show an increase of pressure. Holland(12) stated that the average fluid pressure in six fatal cases was 15.7 mm., in 16 recovered cases 11.5 mm. and in 66 normal symptomless infants, 8 mm. He also says that of the 66 normal cases 32 had yellow fluid containing blood.

PATHOLOGICAL RESULTS OF ARACHNOIDAL HEMORRHAGE

It has been known for a long time that the presence of free blood in the subarachnoidal spaces acts as an irritant and produces an aseptic meningitis which may have serious lasting effects. This is particularly true in hemorrhage incident upon head trauma. Not long ago I had a case of head trauma where an encephalogram showed that the arachnoidal spaces over the cortex had become apparently almost blocked by an arachnoiditis resulting from the trauma. There was a coincident internal hydrocephalus. It is a fair inference that subarachnoidal hemorrhage in the new born will produce the same reactions and lead to organic meningeal and cortical lesions. Winkelman(13) in 1931 in discussing cerebral birth injuries in relation to mental deficiency calls attention to the fact that subarachnoidal hemorrhage produces an aseptic meningitis of the piaarachnoid with an exudate of polynuclear cells, lymphocytes and macrophages, and a proliferation of the fixed tissue elements. The fibroblastic proliferation may block the arachnoidal spaces, and the inflammation may extend into the cortex with marginal glia proliferation and interference with the cortical blood supply and arrest of cortical development or atrophy. Where arachnoidal hemorrhage is of severe type extensive arachnoidal cysts may result. This tendency to arachnoiditis and arachnoidal adhesions and cyst formation is one of the major reasons for repeated therapeutic lumbar puncture.

NEUROLOGICAL CLINICAL TYPES RESULTING FROM CEREBRAL BIRTH INJURIES

The main neurological syndromes resulting from cerebral birth injuries are the spastic hemiplegias or diplegias, the epilepsies, idiocy and feeblemindedness, the choreo-athetoses. and hydrocephalus. From what has been described in respect to the pathology and location of the injuries received during birth we can readily see how these various syndromes may occur alone or in combination with one or more of the others.

Lashley$^{(14)}$ describes intelligence as a mass function to the cerebral cortex. Feeblemindedness and idiocy therefore depend upon the amount of destruction or arrested development of the cortex induced by meningeal hemorrhage over the cerebral hemispheres.

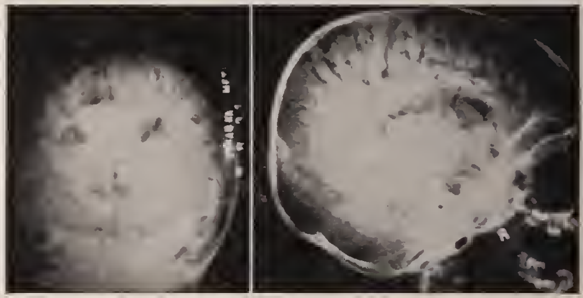
On the other hand. gross lesions of the basal ganglia may occur producing muscle rigidity and choreoathetoid disorders of severe character without any impairment of the intellect. The symptoms of Little's disease may arise from the degenerative lesions of the white matter of the cerebral hemisphere described by Schwartz. Epilepsy with spastic hemiplegia or diplegia doubtless originate from lesions of the motor cortex. Time does not permit of a detailed analysis of other neurological states consequent upon birth injury but it is interesting to note that Schroeder$^{(15)}$ as a result of a study of 5000 children referred to the Chicago Institute for Juvenile Research, found that behavior deviations, marked by hyperactivity and distractability, frequently had their organic basis in cerebral injuries received during birth.

PROGNOSIS

Lest this description of the organic pathology of cerebral birth injuries should give too great an impression of hopelessness, it would seem advisable to present some evidence that birth injury does not necessarily mean permanent after effects. Follow up studies of the subsequent history of infants showing symptoms of intracranial injury at birth show a very fair proportion of normal health. It is the belief of most authors that immediate and proper treatment during the first days of life gives the best prospect for the avoidance of late sequelae.

Hannes$^{(16)}$ studied the late history of three groups of 150 infants each. One group was of normal births; one of infants showing asphyxia at birth; and one of infants delivered by operative interference, forceps, etc. He found there was no difference in the percentage of the three groups in respect to the late development of neurological symptoms. However, he found that twice as many of the asphyxiated children died during the first year than in the other two groups.

ENCEPHALOGRAPHIC STUDIES



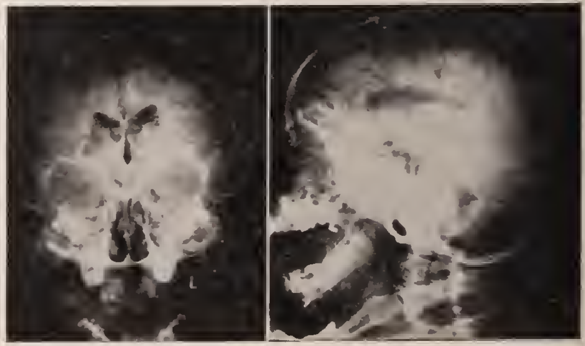
Case I, Fig. I.

Case No. 1—Baby C. H. R., age 18 months. Was born by Caesarian section after two to three days labor and was cyanotic and had delayed respiration at birth. The patient began at 6 months with petit mal attacks and at 9 months with grand mal seizures at times in series, having 140 convulsions within nine days.

Examination: Unable to hold head up or stand, retarded to about the level of a 5 months old child. Spinal fluid pressure and other findings normal.

Encephalogram: 120 c.c. air injected. The lateral ventricles were at the upper limit of normal size, there was slight displacement to the right. The left ventricle was slightly larger than the right. The subarachnoid channels about the base of the brain and within the cortical sulci were unusually prominent and slightly widened, most particularly over the frontal and anterior parietal regions. Although the demarcations were visualized over the occipital poles.

Diagnosis: Slight cortical atrophy from birth hemorrhage.



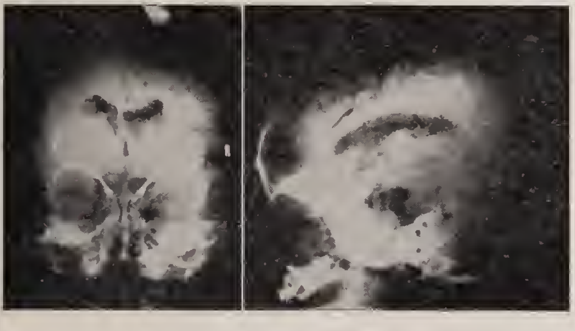
Case II, Fig. II.

Case No. 2—Baby E. J., age 11 months. Was born after three hours labor. Normal delivery, weight 8 pounds. Was entirely well except for an attack of otitis media at 5 months, ear not lanced, until 9 months of age when suddenly developed convulsions that continued up to date.

Examination: Microcephaly, atrophic optic disks, mental retardation. Spinal fluid pressure and serology normal.

Encephalogram: Marked widening of the supracortical subarachnoid spaces to a width of about 15 mm. from the frontal to occipital poles. The cerebral convolutions appeared shrunken and underdeveloped and the sulci were prominent being quite deep although not particularly broad.

Diagnosis: Marked underdevelopment of the brain, both cerebrum and cerebellum, from birth hemorrhage, organic epilepsy.



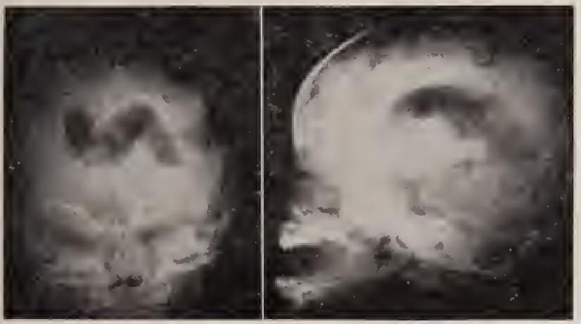
Case III, Fig. III.

Case No. 3—Baby B. J. A., age 7 months. Was a normal birth, labor about 4 hours. First baby, but no post partum symptoms noted. At about 4 months began with slight generalized convulsions in series, attacks occurring almost daily.

Examination essentially negative, spinal pressure and serology negative.

Encephalogram 70 cc. of air injected. There was slight displacement of the lateral ventricles toward the left in their median and posterior protion (this finding was exaggerated by the slight rotation of the head at the time of taking the film) there was slight widening of the third ventricle. The subarachnoid spaces over the cerebral cortex are greatly widened, measuring 10-15 mm. in width. The subarachnoid spaces on the right are more enlarged than those over the left cortex and the subarachnoid space appears partially obliterated over the occipital pole of the left hemisphere. The parenchyma of the cerebrum is shrunken.

Diagnosis: Atrophic cerebrum, from birth hemorrhage.



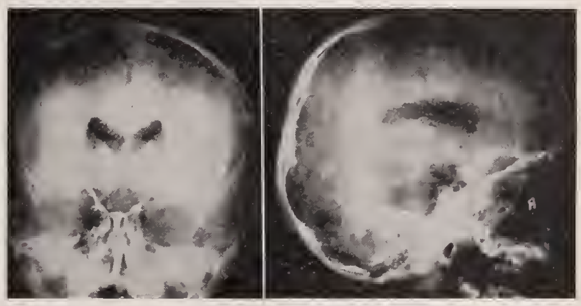
Case IV, Fig. IV.

Case No. 4—Baby M. W. N., age 7 months. At 3 months of age had general convulsions, for 5 weeks convulsions of daily occurrence.

History of precipitate labor lasting ¾ of an hour, no cyanosis. Nursed without difficulty, good cry. Since birth the child has held his head backward and to the right.

Encephalogram. 100 cc. of air injected. Films showed slight dilatation, ventricular system left more than right. Marked increase subarachnoidal air over the left cortex entering from the frontal to the occipital poles down to nearly the base of the skull, practically no air over the right cortex.

Diagnosis: Marked left cortical atrophy probably right sided arachnoidal adhesions, slight generalized dilation of the ventricular system.



Case V, Fig. V.

Case No. 5—K. S., age 5 years. Patient entered hospital March 1, 1932, for mental retardation. Child speaks only occasional word, but seems to understand parents relatively well. Internal strabismus noted since 1 year of age. Enuresis.

Child born 1 month premature. Birth weight? Mother had hemorrhages associated with pain for six weeks preceding delivery. Was in hard labor for 1 day. No instruments used at delivery. From the 10th to 20th day, baby had several convulsions, none since. Sat up at 14 months, walked at 2½ years. Has never spoken more than a few words at a time. Five children in family, all normal. No childhood diseases.

Physical examination: Unresponsive, well developed child with the appearance of mental retardation. Findings consisting of severe upper respiratory infection and internal strabismus. Otherwise negative.

March 7th. Encephalogram. Sodium amytal. Initial pressure 36 mm. H8 66cc. fluid removed. 85 cc. air injected. March 17, 1932, repeated encephalogram pressure the same. 80 cc. fluid removed. 100 cc. air injected.

Diagnosis: Bilateral cortical atrophy with widening of lateral ventricles.

Following the encephalograms the child seemed more alert and it was thought that her mental condition showed improvement.

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THE PREVENTION OF INTRACRANIAL INJURY*

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The obstetrician is the first medical attendant of the newborn child and should be vitally interested in its welfare and development. This includes the time of the baby's intrauterine existence, from early pregnancy until the child is born. We should not be satisfied in just delivering a live baby, but it must be a normal baby, capable of a normal extrauterine existence. At times the rights of the unborn child are undoubtedly not recognized or are overlooked. The obstetrician should study the frequency and causes of the infant morbidity and mortality and by the early recognition of the symptoms institute the proper treatment, thus lowering the fetal death rate in this country.

The average foetal mortality rate for the registration area of the United States is 6.8%. It is found that intracranial injury is the most frequent cause of foetal death during labor and the first week of life after delivery. This also interests the obstetrician as there seems to be an apparent belief among many medical men, that intracranial injury is the result of poor or brutal obstetrics. This belief is oftimes communicated to the parents of the unfortunate child, and they are very quick to place the blame upon the attending obstetrician. From a study of these cases it is shown that this injury can happen in the most normal delivery. and if this fact were appreciated the false impression would not be given.

The frequency of intracranial injuries has only been generally recognized since 1911 when Beneke's technic of post mortem examination of the skull came into more general use. The records of the deaths from this injury in the European and American clinics are very nearly alike.

FREQUENCY OF INTRACRANIAL HEMORRHAGE
EUROPEAN CLINICS

	autopsies	brain hemorrhages	
Pott	101	14	
Bauereisn	47	11	
Benthin	73	8	
Meyer	64	12	
Moreno	40	10	
Vischer	186	74	
Warwick	36	18	
Schaefer	680	140	
Yagi	178	62	
Cruckshank	800	161	
De Luga	770	474	
Kuhn	56	18	
	3011	1002	30%

AMERICAN CLINICS

Bailey	100	40	
Rodda University of Minnesota			50%
Paddock	146	63	
Tyson	119	29	
Voron	70	21	
Irving	182	73	
	617	226	28%

From these statistics we may say that 30% of all deaths at birth or during the first week of life are caused by intracranial injury. The general foetal mortality of the United States is 6.8%; so the infant mortality from intracranial injury would be about 2.7%. This is much larger than generally recognized. If we consider that oftimes serious and damaging, but not fatal, injury occurs during the birth we must greatly increase the frequency of intracranial injury to the newborn. Schwartz has shown that approximately 95% of all children dying during birth, or the first week of life, irrespective of the cause, show macroscopic and microscopic injury to the brain. This occurs in all deliveries from the so-called physiological trauma and is found most frequent in the premature or immature, and in the primipara.

It is found from an analysis of the different types of labor (Irving, Boston Lying-In Hospital) in 13,849 deliveries that cerebral injury occurred in 0.4% of normal labors, 0.3% in Caesarian section, 0.5% in low forceps, 0.3% in mid forceps, 2.6% in high forceps, 2.6% in breech extraction, and 1.7% in version. From this we will learn that fetal injuries occur much more frequently in labors associated with surgical interference. But we must take into consideration that this interference is done in a number of cases because of some complication present at the time, and the percentage would be higher if left alone. In my personal experience the frequency and extent of intracranial injury has been greatly decreased in the last fifteen years. This, in spite of the fact that we undoubtedly make better clinical diagnosis of these cases than we did formerly, shows if we study this question carefully and apply the knowledge obtained we can reduce the frequency of intracranial injury, but not prevent it entirely.

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It is necessary to carefully consider the cause of this injury in order to recognize and institute the proper preventative treatment. First we must recognize that it is present in nearly every natural birth and the more immature or premature the foetus the more common the injury. This is due to the lack of the development of the elastic fibers in the walls in the vessels. especially of the veins. The presence of infection in the mother predisposes to hemorrhage, and we should eliminate any such source. In certain cases a hereditary hemophilia will enter into the history of the cause. It is generally found that syphilis is a common predisposing factor in many injuries to the brain, both intrauterine and at the time of birth.

Second we have the mechanical cause, arising from some circulatory disturbance of the newborn. This may be caused by the so-called negative pressure, the difference between the atmospheric pressure on the presenting part, and the internal pressure of the uterus on the foetal head and body, causing a slowing of the circulation and an increased congestion in the vessels of the presenting part, undoubtedly causing many of the minor or petechial hemorrhages in the cortex of the brain. This interference with the foetal circulation may result in an asphyxia which must be considered as an active cause of intracranial hemorrhage. This produces intense intracranial congestion, extending over the entire cranial cavity, and will predispose to hemorrhage, if it does not actually cause it. It has been shown experimentally in animals with bicornate uteri, if the blood vessels of one horn are ligated and the other used for control, that the young from the ligated horn will show marked evidence of asphyxia and intracranial hemorrhage, while those from the normal uterus will show no change. These animals have thick skulls and practically never have cerebral hemorrhage from passing through the birth canal.

The third cause is the traumatic and will undoubtedly produce the most of the obstetrical hemorrhages, in conjunction with the other two. The head of the foetus is invariably subjected to pressure when passing through the birth canal under the most normal condition, producing more or less moulding. This condition usually occurs slowly, giving the contents of the cranium time to readjust, but at times may be very rapid as in precipitate labor, hasty forceps and rapid breech extractions, and not allow time for readjustment. This subjects the falx cerebri, the tentorium, and the cerebral veins to tension. and if the moulding is rapid or excessive the tissues will tear. Usually the amount of tearing is in direct proportion to the rapidity, and to the amount of moulding of the foetal skull. All pressure in extraction of the head by the forceps is abnormal. If this pressure is rapidly applied the injury is more apt to be increased.

It is estimated the foetal head will require four times as much pressure to cause damage if applied slowly as it will if applied rapidly. If the pressure is applied in the biparietal diameter more fractures of the skull will be produced with less trauma to the dura. If the pressure is applied in the fronto occipital diameter less fractures are produced, but more dural tearing and injury. Oblique pressure, over the frontal eminence and mastoid process will produce an aggravation of both fracture and tearing of tissue of the brain. The intracranial injury will correspond to the severity of the birth trauma, the amount and rapidity of the moulding of the head, the disturbance in the intracranial circulation, and the resistance of the vascular walls of the cerebral vessels.

The preventative treatment of cerebral injury is entirely in the hands of the obstetrician and although a small number occur in normal deliveries, the responsibility before and during labor is entirely his. To the pediatrician belongs the immediate and curative treatment, while the neurologist has the palliative treatment of the late result. By improved obstetrical knowledge, judgment, and treatment the number of injuries can be greatly reduced. The difference in the infant mortality rates in the hands of skilled and unskilled obstetrical care is about 1:4.

Cerebral injury, to some degree, is comparatively common in any type of labor, but we must apply our knowledge and judgment to prevent the condition. Our first contact with the patient is the time to begin this study. At this time we may obtain a history of hemophilia, or an increased tendency to bleed, at the time of birth or later in life. If this is present we must be certain that the growing foetus has reached its full state of maturity before the time of delivery. This may be obtained by giving the mother viosterol, 30 mm. or cod liver oil, one-half ounce daily. A history of prematurity can be often helped by giving thyroid extract during pregnancy, and by the avoidance of exertion in the latter months of pregnancy. Here again the viosterol is of value. A Wassermann test should be taken and if positive the syphilis must be adequately treated during the pregnancy, to avoid possible injury to the foetus and also to obtain a negative reaction in the newborn child.

In order to avoid extreme cerebral congestion we must be in touch with the progress of labor at all times. This condition is usually diagnosed by a sudden or prolonged change in the rate and rhythm of the foetal heart. In order to recognize the foetal heart should be heard and rate recorded at least every 30 minuts during labor. If this cannot be done the foetal heart should be checked as often as possible. This condition is usually caused by interference with the placental circulation, by excessive pressure on the foetal body with negative pressure, or the suction action on the head increased. Prolapse of the cord may be the cause. If so the knee-chest or the extreme Trendelenberg position may displace the cord, if it recurs or cannot be replaced immediate delivery may be done if the birth canal is ready, or the colpeurynter used to prepare for delivery. If the asphyxia is caused by excessive tetanic contraction it can be relieved by ether anesthesia, or by the use of sodium amytal intravenously. Sodium amytal will relax the uterus and also the cervix, allowing labor to progress normally in many cases. Very seldom will abdominal hysterotomy be required in this condition unless a toxemia is present. A prolonged labor, if due to inertia or resistance of the cervix, should be treated first by rest, morphine, chloral hydrate or sodium amytal. If a normal progress of labor does not follow, the use of the colpeurynter or the abdominal hysterotomy is recommended. A short cord causing asphyxia, if diagnosed, can only be treated by caesarian section. In this type of case, as well as all others, it is essential to preserve the amniotic sac as long as possible. As long as intact the intrauterine pressure is transmitted equally to all parts of the foetus. The rupture of the bag of water causes a sudden shifting of the points of pressure with result that the pressure will be greatly increased at certain points.

Before labor we should have a knowledge of the shape and size of the maternal pelvis and the relative proportion of the foetal head. This is most essential in a breech delivery as the test of labor to see if the head will engage cannot be used. If this disproportion is too great, even if the foetus can be gotten through the pelvis, there will be excessive moulding of the foetal head, with increased congestion of the cerebral vessels, and the stage is ready for the occurrence of cerebral injury.

In our desire to prevent laceration of the perineum we often delay the expulsion of the head. This is especially true with the delivery of premature and immature babies. These children, being small, should not in the minds of the majority of practitioners cause any injury to the pelvic outlet, forgetting the cranial vault is very soft and elastic. This allows excessive and rapid moulding of the head. The cerebral vessels are not mature, lessening their resistance to tension. For these reasons it is good practice to do a routine episiotomy in all premature deliveries if there is much resistance to the progress of the head by the perineum. This with routine blood injections immediately after labor will greatly reduce injury in the premature baby. The indiscriminate and improper use of pituitrin will greatly increase the frequency and severity of intracranial damage. When we know in a normal labor the intrauterine pressure, the cerebral congestion and the resistance present will cause injury, we certainly should realize the overstimulation of the uterus, with the other factors present will increase the possibility of cerebral damage, not necessarily fatal, but giving us the minor injuries showing up later in life. This can be avoided by using this powerful drug in small doses, giving a physiological action, and not in large doses, giving a pathological action: and then only when there is no obstruction to the progress of labor, either by the soft tissues or the bony parts of the birth canal. Low forceps, properly used, with about the same frequency of damage to the baby as normal labor, are much preferable to the use of pituitrin.

A great increase in the frequency of cerebral injury is found in the surgical assistance in labor. Even in caesarian section it is found, but the records are not clear as to the difficulty in the delivery of the after coming head. For this reason the low cervical Caesarian is the safest operation, as the head is usually delivered first. In the use of the forceps we should know the position and station of the head in the pelvis and the cause of the obstruction of labor. The forceps are best applied in the true cephalic application or as near as possible. That also means the blades should fit snugly over the sides of the head. In many cases, the excessive moulding with lengthening of the head and the asyncletism present, only one blade will fit the side of the head. the other blade either grasping by the tip, or the position of the head will be changed in the pelvis, with increased resistance, for both blades to fit. In these cases the Keilland forceps, or a forcep with a sliding lock is the best to use. If the pressure is always made in the biparietal diameter the danger of tearing the dura, and the tissues of the brain is lessened to the minimum. The occipito-frontal pressure produces the greatest amount of tearing of the dura, while the oblique application causes both laceration of the dura and brain injury, and fracture of the skull. The compression should be moderate and only sufficient to prevent slipping of the blades. It should be slowly applied and slowly released as the sudden changes in pressure cause greater damage. Traction should always be made in the axis of the pelvis and immitate the natural forces of labor.

In the breech extraction we have the highest percentage of cerebral hemorrhage. This is usually due to the great haste displayed in the delivery of the after coming head. The head should be flexed and guided gently through the birth canal. If any difficulty is encountered the forceps should be used. The Piper breech forceps are ideal in these cases, as they allow the manipulation necessary for the application and delivery. As the distance from the lock to the tip is great less pressure can be exerted on the head. Remember very few babies are lost in breech extraction from asphyxia, but many are lost from cerebral injury. Haste and ignorance of the mechanism of the after coming head are largely responsible for the average 14% foetal mortality in this type of delivery.

Immediately after any prolonged labor, or after any difficult assisted delivery it is advisable to give 20-30 cc of the father's blood to the newborn. This is given intramuscularly with little or no difficulty. Avoid too much distention of the foetal tissues or occasionally they may slough. It is very important from a preventive standpoint in the treatment that we do not aggravate or increase the damage being done by our attempt to recusitate the child. Never use force in any way, do not double the baby up or swing it in the air, but treat it gently. One would not think of subjecting a baby a few days old to the trauma oftimes inflicted immediately after birth. Keep the baby warm, by the electric heater, or the hot water basin. Use a rubber bulb syringe or catheter to remove the mucus from the throat. Stimulate the respiratory center by the use of carbon dioxide. We always have it in the exhaled air. Do gentle mouth to mouth breathing, about 12 per minute, persist as long as the foetal heart beats. Better, but not always available, is the use of the 5% carbon dioxide and 95% oxygen mixture. This is conveniently and safely given through a small catheter introduced through the nose into the naso pharynx. The Sylvester method of artificial respiration may be used with this, or it may be combined with the mouth breathing. Always be gentle and never use force in any way as the newborn is a delicate piece of mechanism and irreparable damage can be done.

A forced delivery. irrespective of the position, presentation and proportion, through undilated soft parts will likely rupture the congested vessels of the foetus and do the mother much irreparable damage. Normal childbirth is not a pathological process and the average obstetrician in the average case will have more undamaged babies born from undamaged mothers if he follows a policy of watchful intelligent waiting. Ehrenfest well says nothing should be done to hasten or shorten a labor that is progressing normally.

EARLY DIAGNOSIS AND TREATMENT OF INTRA-CRANIAL HEMORRHAGE IN THE NEW-BORN*

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The fact, now firmly established by anatomic investigations, that intra-cranial birth traumatisms occur with great frequency, makes it of prime importance that we have a clear picture in mind of the early symptoms.

Since the overwhelming majority of all confinements are managed by the general practitioners and since the effective therapy is dependent upon the early diagnosis it is evident that the chief responsibility in alleviating the effects of cranial birth traumatisms must be theirs.

It is for these reasons, to get clearly in the minds of all of us who deal with these cases the prophylactic obstetrical measures, the early diagnosis and treatment and the late effects and their management, that this symposium was prepared.

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The early symptoms of intra-cranial hemorrhage in the new-born do not present a definite fixed picture. The symptoms vary according to the location, type and severity of the hemorrhage. There are undoubtedly many cases of such a mild type that they pass unrecognized.

The most common symptoms which are found early are:

1. Signs of cortical irritability; crying, heightened irritability of the motor centers such as, twitching of the muscles, spasticity, and convulsions. In some cases of ventricular or sub-tentorial hemorrhage the infant may be very quiet or even comatose but usually even in these cases there are early signs of cortical irritability.
2. Refusal to nurse. This is probably due to disturbance of the normal reflex of nursing.
3. Disturbance of respiration. The breathing may be either slow or may be rapid and irregular.
4. Cyanosis or pallor.
5. Signs of increased intra-cranial pressure.
6. Paralysis.
7. Ocular signs.
8. Changes in the coägulation and bleeding time of the blood.

Let us consider in a little more detail each of these signs.

1. Cortical irritability. The symptoms of cortical irritation will always tend to dominate the picture, even if the cortex itself is not directly affected by the hemorrhage as oedema or pressure of a hematoma from beneath may produce the irritation. The symptoms may vary from merely a definite increase in the spasticity of the extremities with occasional twitchings of the muscles to generalized convulsions. Perfectly normal newborn may present the former picture at times so that alone these symptoms are not diagnostic.

In the average hemispheric type there is a twitching or convulsive movement of the lower extremities, either unilateral or bilateral. This may come on only when the infant is disturbed or may come on at regular intervals. In a few cases which we have seen there was a constant fine twitching of one or more extremity. Usually there is a definite hypertonicity during the intervals. In most cases the upper extremities are involved at the same time. In some cases the spastic condition of the upper extremities is noticed first. Generally the convulsive movements are bilateral even though the hemorrhage is only on one side of the brain.

In cases where the hemorrhage is infra-tentorial the cranial nerves may be involved first with convulsive movements of the facial muscles or of the eye muscles.

In cases where the hemorrhage is extensive so that the intra-cranial pressure is markedly raised there may be a series of general convulsions. These begin with clonic convulsions of the extremities, strabismus, nystagmus, opisthotonos, respiratory disturbance, and loss of consciousness. In some of the ventricular hemorrhages the infant may have tonic convulsions similar to these seen in tetanus.

In the average case it is not possible to localize the hemorrhage from the symptoms. Seitz, however, asserts that very careful observation during the first seizures often enable one to determine that the extremities of one side contract more violently than the other. He succeeded, thus, in diagnosing correctly the seat of the hemorrhage in five cases out of seven.

When we remember the general cortical irritability of the brain in the new-born and the fact that a hemorrhage on one side may be accompanied by oedema on the opposite side we can understand how it is that it is only the exceptional case which gives a clear enough picture to allow us to localize the lesion with any degree of certitude.

2. Refusal to nurse. This is. probably, due to a disturbance of the normal nursing reflex. In the normal infant the reflex may be brought out by putting the finger or a nipple against the lips. In these cases no attempts or very weak attempts are made to nurse.

In Donald Munro's careful study of the clinical symptoms in 117 cases, refusal to nurse was a symptom in 72 cases.

Occasionally the nursing reflex is not established in a premature or immature infant who has no evidence of hemorrhage so this symptom while strongly suggestive is not pathognomonic and must be considered as additional evidence in the presence of other signs.

3. Disturbance in respiration. This may take the form of very slow breathing or a very rapid breathing or an irregular breathing. As the respiratory center in the new-born is rather irritable, the changes in respiration must be marked to be of any great significance. Slow breathing is usually a sign of subtentorial or intra-ventricular hemorrhage which causes direct irritation or paralysis of the medullary centers.

4. Cyanosis is a very common symptom. In Munro's series of cases it was a symptom in 77 of 117 cases. It is an accompaniment either of respiratory embarrassment due to the direct ef-

fect of the hemorrhage on the center or else to the cessation of breathing due to a convulsion. There may be an atelectasis associated with the cerebral injury, the atelectasis being due to the shallow breathing resulting from the disturbance of the respiratory center. If this is present cyanosis is naturally a more prominent symptom.

Many times a diagnosis of asphyxia neonatorum is made when the infant has a feeble cry, poor respiration and either pallor or cyanosis. As a result strenuous efforts are made to restore breathing and the hemorrhage is increased, the breathing becomes more feeble and the cyanosis more marked and in many cases what might have been a possible recovery becomes hopeless.

If there is any point which I would stress more than another it would be that cyanosis is a very frequent symptom of intra-cranial hemorrhage and that there is a very great liability of increasing the damage by very strenuous methods of resuscitation.

5. Signs of increased intra-cranial pressure. The symptoms or physical findings, here, are increased tension or bulging of the fontanelle and increased pressure of the spinal fluid. In over half of our cases, increased tension of the fontanelle was observed. In Munro's series it occurred in 64 of 117 cases. If definite and especially if there is an increasing tension or bulging after birth it is a very valuable sign. In some cases in which there are minute hemorrhage or infra-tentorial hemorrhages there is no increased tension or else a very slowly increasing tension.

In one series of 95 cases, 139 measurements were made, the average pressure was between 20.9 mm. and 11.1 mm. The normal pressure is from 2 to 6 mm.

Increased pressure of the spinal fluid as shown by lumbar puncture is present in the majority of cases of clinical importance. It will show even when there may not be a noticeable increase in tension of the fontanelle or a spreading of the sutures. The chief value of the spinal puncture, however, is not in the measurement of the pressure but in the determining of the presence of blood.

Blood reaches the spinal canal directly in all infra-tentorial and peribulbar hemorrhages; gradual diffusion, from supra-tentorial basal and even from hemispheric hemorrhages if they are copious. The chief difficulty is to do a spinal puncture in an infant without causing bleeding from puncture of the veins in the anterior wall of the spinal canal. Anyone who has attempted many spinal punctures in infants knows that this very often happens. On this account, if blood is obtained, the fluid must be immediately examined for signs of older hemorrhage such as morphologically altered, degenerated red blood cells, cellular debris, hematin pigment, etc. If only normal appearing cells are present. the chances are that the blood is the result of the puncture.

6. Paralysis. This is rather a late sign except in the most severe cases where it is often a terminal symptom. We will not discuss it in detail here as Dr. Young has already taken up that phase of the question.

7. Ocular changes. Munro noted nystagmus in 26 out of 117 cases. We have occasionally seen dilation of the pupils, either unilateral or bilateral, in severe cases. The ophthalmoscopic examination of the eye grounds is difficult in the newborn and in many cases not entirely satisfactory.

Dr. Kearney, however, believes that "the ophthalmoscopic study of the eyeground of the new born offers one of the earliest and most reliable means of diagnosing intra-cranial hypertension." He finds "the characteristic ocular signs to be as follows: mild oedematous blurring of the upper and lower margins in the first few days of life, later an oedematous blurring of the entire surface of the nerve head and all of its margins. When intra-cranial hemorrhage is severe and the tension greatly increased, gross oedematous change may appear quite early, the oedema being confined to the nasal half of the disc, or affecting the entire disc, show a typical papilledema."

8. Change in the coagulation time of the blood. Using Rodda's method it has been found that the average coagulation time in the newborn is seven minutes with a normal range between 5 and 9 and up to 11 minutes. Hemorrhagic conditions show a distinct prolongation of the coagulation time to 30 or 40 minutes. Rodda believes that routine examination of the newborn will lead to the recognition of these cases and thus will give opportunity to inject blood early and stop a hemorrhage which might otherwise be fatal.

Differential diagnosis. The main conditions occurring in the newborn which must be differentiated from intra-cranial hemorrhage are as follows:

1. Sepsis of the newborn. The symptoms of sepsis usually come on later, between the third and tenth day. There may be general convulsions, cyanosis, and respiratory difficulties as well as refusal to nurse, but in most cases there are elevation of temperature, increased jaundice, hemorrhagic tenden-

cies and local manifestations of infection. Not infrequently intra-cranial hemorrhage will, also, be present in a case of sepsis.

2. Atelectasis. The differential diagnosis in this case is not so important as atelectasis many times is the result of the intra-cranial hemorrhage. If shallow respiration, intermittent attacks of cyanosis and x-ray findings of atelectasis are the only symptoms especially in a weak, immature infant the probabilities would be that the atelectasis was not due to a hemotrhage. The treatment would be practically the same in either case.

3. Congenital Heart. Cases of congenital heart lesion with positive physical signs are easily diagnosed. The x-ray examination may show enlargement or abnormalities of shape of the heart shadow when there are no murmurs present. In general it may be said that cyanosis of varying degree, associated with a constant heart murmur, and the less constant finding of cardiac enlargement, means congenital disease. Cyanosis in the absence of these findings is more apt to be due to some other neo-natal abnormality such as intra-cranial hemorrhage, atelectasis, etc.

4. Pneumonia. This can be ruled out by physical signs, x-ray examination of the chest, and the temperature curve. Blood examinations may or may not be of any assistance. There are various other conditions which must, occasionally, be differentiated such as enlarged thymus, diaphragmatic hernia, tetanus neo-natorum, encephalitis, meningitis, acute congenital hydrocephalus, eclampsia neo-natorum and mytotonia neo-natorum.

Time will not allow me to discuss these in detail. Most of them are rather uncommon and with the exception of acute congenital hydrocephalus and eclampsia neo-natorum, have some physical sign or symptom which makes the diagnosis evident. In acute congenital hydrocephalus the distention of the fontanelles and the separation of the sutures is excessive, and no blood is obtained either by spinal or cisternal puncture.

Eclampsia neonatorum is a rather loose term applied to convulsive states in infants born of eclamptic mothers. Recent work has demonstrated that many of these infants have intra-cranial hemorrhage and that the convulsions are probably due to that rather than to the toxin.

Treatment: Our immediate problems in the treatment of these babies are as follows:

1. Stop the hemorrhage.
2. Relieve the intra-cranial pressure.
3. Maintain action of the vital centers, respiratory and cardiac.
4. Control convulsions.
5. Maintain the fluid balance and nutrition of the infant.

1. Control of hemorrhage.

On account of the fact that a large number of these cases have a decreased coagulability of the blood we have routinely injected from 10 cc to 20 cc of blood intra-muscularly, repeating in twelve hours if there are signs of continuing hemorrhage. In cases where there is a definite localization of the hemorrhage a decompression operation may be done, the clot removed and the bleeding checked by ligature or packing. It is only exceptionally that this can be done.

2. Relief of intra-cranial pressure.

Either spinal or cisternal puncture should be done. In our own work we always do a puncture when there is increased tension of the fontanelles, neck rigidity or repeated convulsions. Some authorities such as Grulee advise against routine punctures while others such as Brady, Loeber, Green, Devraigne, etc., advise either spinal or cisternal puncture as a routine. Most of the later authorities favor the cisternal route.

3. Maintainance of the action of the respiratory center.

As we have said asphyxia is a frequent symptom in these cases and must be relieved as soon as possible. The use of 10% CO_2 in oxygen has been found to be the most efficacious. If an oxygen chamber is not available the gas may be given by nasal tube or by using an inverted funnel. We use it intermittently. keeping it up as long as needed to relieve the cyanosis and establish regular breathing. Avoid any strenuous mechanical methods of resuscitation.

4. Control of convulsions.

This may be done by avoiding any unnecessary handling of the infant, keeping it as quiet as possible and at an even temperature. If the convulsions are generalized and not relieved by spinal puncture we give sodium luminal by hypo, 1/8 to 1/4 gr. This is repeated as needed. Mag. sulph. intra-muscularly advised by some for convulsions.

5. Maintainance of fluid balance and nutrition.

These infants usually refuse to nurse or else nurse very poorly and, as a result, unless fluid is given in some way they become dehydrated and undernourished and the problem becomes very much more complicated. We feed practically all of these babies by nasal gavage, starting with a 5% glucose solution, 3 ounces every 3 hours and gradually substituting breast milk or formula in 48 to 72 hours. As soon as the baby's condition clears up sufficiently, usually 3 or 4 days, it is put on the breast or bottle.

In two or three cases where the baby was in a critical condition we have used blood transfusions, using the direct method, and giving from 75 cc to 100 cc of blood.

In conclusion, I would say that careful attention to preventative measures as outlined by Dr. Taylor, early diagnosis and a detailed systematic plan of treatment of the first symptoms, have and will lower the mortality from intra-cranial hemorrhage and, also, will lessen the number of cases who go through life handicapped by some neurological lesion.

DISCUSSION

K. S. J. HOHLEN, M. D., (Lincoln): I want to compliment the gentlemen on their presentation of this matter, because in my opinion a large percentage of our defective children in the homes and state institutions is probably due to birth injuries. I would like to emphasize this whole proposition hinges upon the cerebro-spinal circulation. Any pathology within the skull will cause a disturbance in the circulation, and as Dr. Fay has worked out in his water balance theory the substances within the skull cavity must be in the same proportion. We have fluid, blood, and cerebral tissue. If there is disturbance of any of those factors, it is at the expense of the other. That accounts for so many cases of atrophy of the brain, which would have been cases of hydrocephalus if the skull had not been ossified.

I want to help boost the use of the spinal manometer for pressure. Dr. Moore said he did not rely upon the ophthalmoscope. I still maintain intracarnial pressure can be determined earlier by the spinal manometer than by the choked disc. I believe cisternal puncture is a dangerous thing in the hands of the ordinary man. I think the spinal puncture is as efficient, and brings the same results.

DR. FLOYD CLARKE: Not infrequently when an infant presents the symptoms as outlined by Dr. Moore, the differential diagnosis between hemorrhage and cerebral edema presents itself. I believe that cerebral edema can occur without hemorrhage, but probably not as frequently alone as with hemorrhage. The symptoms of cerebral edema are not as profound as those of hemorrhage. The cyanosis is not as apparent, the disinclination to nurse is less marked. Nevertheless it would seem quite necessary to at least think of cerebral edema when symptoms connected with hemorrhage occur in a new born baby.

Another problem which is of interest in some of these cases of severe hemorrhage, and if localizing symptoms are apparent, is it not better to do a flap operation and turn out the clot? The question at once arises whether if it were your child you would not prefer to undertake the risk of an immediate operation, rather than look forward to the time when the youngster is hopelessly paralyzed, a victim of so-called Little's Disease.

E. C. HENRY, M. D., (Omaha): I realize that this subject should be discussed by the obstetricians yet Dr. Clarke brings out a point that admits of discussion by a brain surgeon. I was especially interested in Dr. Young's presentation because we have seen a number of these birth injuries that required operation but the problem is broader than just the new-born.

In this day of rapid transportation, we are always seeing brain hemorrhages. A child who dies within a week or ten days of hemorrhage due to birth injuries dies of one of three things—shock, hemorrhage or edema. When a man is thrown out of an automobile and suffers a skull fracture, he dies of one of the same three things.

The question arises as to what should be done and the cases fall into one of three classes—either the injury to the brain is so great than an operation would be of no value or it is so small that an operation is not necessary. But in properly selected cases a brain operation may be a life saver. Brain cells cut off from their nutrition for seven minutes cause a permanent injury which can never be removed. A muscle cell can have its circulation cut off for two hours and recover.

When a man has had too much of the flowing bowl or a severe concussion, he has a wet brain. When a child has contusions of the brain during birth, it, too, is suffering from a wet brain. Now there are three ways to shrink a wet brain—with sugar, salt or magnesia. The brain pressure can be reduced with either of these drugs.

During the World war, we studied the question of the choked disc very thoroughly. In a large percentage of the cases of increased cranial pressure, there is a blush of the nasal side of the retina but in cases of compound fracture, the brain may be severely traumatized and extensive hemorrhage occurs but no choking of the disc but it is purely a question of the brain not being allowed to expand.

In either the new born or the adult if we have waited until both the pulse and the temperature have gone up from 60 to 150 and the temperature from subnormal to 102 and 103, an operation is of no value.

RALPH LUIKART, M. D., (Omaha): I should like to express the appreciation of the obstetricians for these splendid presentations. I do not know when I have heard a better symposium, or one of more value, on the new born.

There are two drugs used in the induction of labor I would like to mention. In regard to quinine, Dr. Albert Mathieu of Portland, said quinine has been doing more harm than realized. In a series of cases he has reviewed, in the last he has used only pituitrin. The pituitrin can be controlled, and the quinine can not. We are aware of the fact that we know accurately the action of pituitrin. Its action is more rapid, and we have better control of it. I think rarely, if ever, should quinine be given for induction of labor, or to hasten labor. This drug was mentioned by Dr. Taylor for hastening labor. It puts the injuries of the new born on the shoulders of the obstetrician.

Much has been claimed for thymophysin. Most of it is untrue. Its safety is very much exaggerated. My experience has been that the action is practically identical with pituitrin.

Rucker brought out his recent investigations with intrauterine bags and graphs the fact that thymophysin's action is almost identical with pituitrin.

The fragility of the vessel is important. If the cases have been handled properly, no blame should fall on the obstetrician; yet disturbances arise which indicate on pathological examination that there was fragility of the vessels far above the normal, and complications resulted on that account.

FRANK P. MURPHY, M. D., (Omaha): Many men strive for the preservation of the perineum, that is to prevent a laceration of the perineum. They may bring the baby through without a visible laceration, although there are practically always invisible tears in the deeper tissues. Yet they may be doing considerable damage to the baby's brain, particularly in a primipara, if an episiotomy is not done. Dr. Taylor emphasized that in connection with prematures. I think the same thing occurs in the full term baby. There is nothing gained in bringing a delivery to a conclusion with an intact perineum and yet have a baby with a damaged brain.

DR. YOUNG, (closing): I think the discussion has very well brought out the point which I especially wished to emphasize in this symposium, and that is, that cerebral birth injuries of the new born represent an emergency situation which calls for thoroughgoing and immediate treatment.

In regard to the suggestion of surgical treatment, I think the point is well taken in cases of extensive subdural hemorrhage. It is stated that subdural hemorrhage represents the most frequent type of hemorrhage. As there is no communication between the subdural and the subarachnoid spaces, spinal puncture naturally will not drain off the blood lying in the subdural space. If the infant should have a large subdural hemorrhage and we can diagnose its location, a crainotomy is in order for the removal of the blood.

Cerebral birth injuries present a problem which illustrates very nicely the interdependence that exists between different departments of medical practice and how necessary it is that we should look upon our cases upon the broadest viewpoint possible.

DR. TAYLOR, (closing): I agree with Dr. Luikhart on the efficacy of thymophysin. I did not mention it because it resembles pituitrin in action. If you give it when it should not be given, you get the same results as with pituitrin. I think it is safer to use quinine than to let the case go overtime.

In two hundred cases since January first, the only case I lost was a perfectly normal delivery, with no pituitrin or quinine used. The baby died of cerebral hemorrhage. There is more danger in letting the case go overtime than in using quinine. Personally, I have had no bad results from its use.

You may have a large, full-term baby that has anemia. Since we have been using blood routinely immediately after, our mortality in viable prematures has dropped 50 per cent.

DR. MOORE, (closing): I believe there is a cerebral edema present in all hemorrhages; so that in cases of doubt as to etiology of the symptoms we are losing no time in treating cases with glucose solution to reduce the edema.

As to the surgical treatment of cerebral hemorrhage of the newborn it is much harder to make a localizing diagnosis than in cerebral hemorrhage in an adult. In many of these cases we have symptoms due to edema of the opposite side, from the hemorrhage or to a bilateral hemorrhage. Unless we have localizing signs, it is not always possible to know where to go in for surgical relief. If the signs point definitely to one side or the other, surgical relief is an excellent method. I know of such a case recently operated, and immediately relieved. That should be our aim.

PURPURAS*

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PART II

The different agents which may precipitate a purpuric syndrome may be divided into four classes:

I. To this class belong the toxins associated with a septic process, such as (a) Malignant Endocarditis, (b) Miliary Tuberculosis, (c) Typhoid Fever (Hemorrhagic Form), (d) Small Pox, and others. An aplasia or exhaustion of the bone marrow may occur, which contributes to the fatal termination in such cases.

II. To this class belong the chemical toxins, such as benzol, arsenicals (Neosalvarsan considered the most common), Colloidal silver and others.

III. To this class belong the radioactive substances, such as radium, x-ray, thorium and its salts, etc. Piney(7) sites a case of extreme fatal aplasia in a physician who had been engaged in x-ray therapy for ten years.

IV. To this class belong the cellular agents which may cause a mechanical crowding out of the normal elements of the bone marrow by the process of infiltration. The most frequent condition associated with a purpuric picture and caused by cellular infiltration of the bone marrow is leukemia, especially of the acute variety. Practically every case of acute leukemia that I have recorded(8) was on the first observation a case of hemorrhagic purpura.

In rare instances malignant tumor cells may invade the bone marrow and either crowd out or injure the different cells of the marrow.

A very unusual case which I believe belongs to this class, was observed at the university hospital.

Case 5. Thrombopenic Purpura Secondary to Bone Marrow Infiltration Produced by Sarcomatous Cells From a Primary Tumor of a Cervical Lymph Gland.

A man, aged 52, was admitted on January 20, 1931. His previous history did not reveal anything of importance, except for an attack of hematemesis seven years prior. At that time he was treated at a hospital for one week.

Six days before admission he commenced to bleed from the nose. He would have 5-6 nose bleeds a day, each lasting 5-10 minutes. At 6:00 a. m. on Jan. 20, the day of admission to the hospital, he had a severe nose bleed. A physician was called about 8:00 a. m. who attempted to control the bleeding by packing. Another attempt to check the bleeding was made by the physician that evening, and, failing in this, he sent the patient to the hospital about 11:00 p. m. Recorded important findings on admission: (1) Profuse bleeding from the right side of the nose, around the gauze packing, (2) one large gland in the left posterior triangle of the neck and palpable inguinal glands, and (3) purpuric lesions on the skin, consisting of pinhead to almond sized reddish-brown spots, and a few large ecchymotic areas. The bleeding persisted all night and the following day. He was transfused on

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Jan. 22 with apparent benefit. Some oozing, however, persisted even after the transfusion.

He was transfused four times during this period of hospitalization, which lasted to March 10. Different topical applications were made to the bleeding areas in the nose. The right side of the nose, from which most of the bleeding occurred, was cauterized several times. Many medicinal agents were also used. X-ray was used over the spleen as a therapeutic measure. All the combined efforts finally succeeded in checking the oozing from the nose and gums about Feb. 10. From there on he quickly regained his strength. He left the hospital on March 10, much improved.

His blood count on admission was: Hgb. 95%, R. B. C. 4,800,000, W. B. C. 2,900 of which 72% were Polynuclears, 23% lymphocytes, 4% monocytes and 1% myelocytes. During the first three weeks the blood count was rapidly diminishing. On Feb. 10 it was: Hgb. 22%, R. B. C. 1,460,000. On March 9 the blood was decidedly better: Hgb. 70%, R. B. C. 4,160,000.

The clotting time was 6½ min., the bleeding time 1 hr. 43 min., and at one time as high as 2 hrs. 38 min. The platelets on admission were 34,000 per c.mm., and fluctuated between this figure and 156,000. Six days after leaving the hospital he had another severe nose bleed. He returned to the hospital on March 16. The bleeding this time was easily checked. He left the hospital on March 19.

He felt well after this for about 18 days; then he was taken with chills, fever and gastric distress. Along with these he commenced to bleed again, more from the gums and mucous membrane of the mouth than from the nose this time. He was again admitted to the hospital on May 20, 1931. At this time all the cervical and axillary lymph glands were swollen. Bleeding from the mouth was persistent. The temperature was of the septic type, ranging from 99 to 105 with diurnal peaks and falls. The leucocyte count showed a persistent leucopenia, between 2600 and 4000. The differential leucocyte count was unusual: he showed a decided shift to the left, with numerous myelocytes and myeloblasts, as high as 28%. The other blood findings were similar to those during the first admission. He was in the hospital for fourteen weeks. He was gradually losing ground, and died on August 25.

Autopsy findings of importance: The spleen was very large, 20x13x10 cm., weighing 940 gms. It was very firm and cut with resistance. The microscopic sections of the spleen, cervical lymph gland and the bone marrow were of the greatest interest.

The lymphoid tissue in the cervical lymph gland and the spleen was greatly diminished and replaced by actively growing cellular connective tissue. Numerous large undifferentiated cells, some of them with two or more nuclei, were scattered throughout the tissue. In the bone marrow the same large undifferentiated cell was observed. This cell undoubtedly was foreign to lymphoid as well as to myeloid tissue. It was a neoplastic cell, sarcomatous in nature. Obviously the hemorrhagic purpura was on the basis of myeloid irritation produced by the neoplastic cells. The finding of high numbers of myeloblastic and myelocytic cells in the blood smears also substantiate this contention.

This case presents a good example of symptomatic thrombopenic purpura caused by tumor-cell irritation of the bone marrow.

Coming now to the Class B, peripheral purpuras, or those of the non-thrombopenic variety. These purpuras are presumably due to defect or alteration in the vascular walls. The platelet count as well as the phenomena depending on the platelet factor in the blood (bleeding time, quality of the clot) are normal. The bleeding is supposed to be due to injury to the vascular endothelium, the cells which form the cement-layer of the inner wall of the blood vessels.

The causative agent, whatever its nature may be, affects the binding cells of the vascular wall; in consequence these cells lose their cohesiveness, the vascular wall becomes hyperpermeable. permitting the different elements of the blood to penetrate into the surrounding structures.

Anaphylactoid purpura or allergic purpura belongs to this class. Vaso-dilation, associated usually with the allergic phenomenon, may be of such a degree that the cementing endothelial layer gives way; exudation of either serum, or cells, or a combination of both takes place. Hence, the multiformity of lesions for which, according to Christian(2), "the dermatologist has as many names as there are many surface appearances. Purpura simplex, purpura rheumatica, erythema simplex, erythema multiforme, erythema urticans, erythema nodusum, angio-neurotic edema, etc., are all different names for the same underlying condition which we may call allergic purpura." The most important forms of allergic purpura are those in which the visceral lesions predominate. The organs and tissues most commonly affected are the kidneys, intestinal tract and synovial lining of the joints.

Schönlein's purpura and Henoch's purpura are both examples of this condition. Both Schönlein's and Henoch's purpura are supposed to be at the present different forms of one and the same under-lying condition. Hemorrhagic nephritis may accompany either one of them. The combination of urticarial skin lesions, visceral manifestations and hemorrhagic nephritis may all occur within a short period, as the following case illustrates:

Case 6. Schönlein-Henoch's Purpura and Hemorrhagic Nephritis.

A girl, aged 12, entered the University hospital on June 7, 1924, complaining of pain in the abdomen. About two weeks before admission she was suffering from a "rheumatic condition". At that time she had swelling of the feet and arms, painful to touch and aggravated by motion, and accompanied by fever. Epigastric pain and vomiting developed within the last few days before admission. On examination, marked tenderness was elicited in the epigastrium, but no rigidity or palpable masses were found. The urine was negative on June 7. The blood count showed a moderate leucocytosis, 14,400, with 86% polynuclears. The hemoglobin and red count were normal. Clotting and bleeding time were normal. On June 16 albumin was found in the urine in high concentration and many red cells. About the same time a purpuric eruption appeared on the entire body and extremities. The albumin persisted, but the rash was gradually fading. She left the hospital on July 10. The abdominal condition disappeared and the purpuric lesions practically gone. The hemorrhagic urinary condition remained the same.

She reentered the hospital on July 12. Her general condition was good. There was no nitrogenous retention in the blood. The concentration test of the urine was negative, and there was no edema. The red cells in the urine with the accompanying albumin persisted. The red count and hemoglobin were not affected to any noticeable extent.

Her tonsils were removed on August 7. The postoperative record was uneventful. She left the hospital on August 15 improved and on the road to recovery.

The important lesson one could learn from this case is that abdominal pain with vomiting does not necessarily spell a surgical condition. Many cases in this class are fortunate in developing the skin lesions either before or simultaneously with the visceral lesions; in such cases the diagnosis is much facilitated.

Certain infections may be accompanied by purpuric manifestations, in which the platelets are not affected. In some of these infections the bacteria may act as direct irritants to the capillary wall. In subacute bacterial endocarditis one frequently observes more or less mild purpuric lesions.

Epidemic cerebro-spinal meningitis occasionally may be accompanied by a pronounced purpuric eruption. Such a case has recently been treated at the University hospital.

Case 7. Meningococcic Meningitis With Purpuric Skin Eruption.

A male child, seven weeks old, was brought to the hospital on March 5, 1932. Following a "cold" of one week's duration, the child developed a temperature of 104.5 on the day previous to admission. On the morning of admission the parents noticed that the skin was covered with little red spots.

On examination, the body was covered with variously shaped and sized petechial hemorrhages. The eruption was also generalized on the face, arms and scrotum, as well as on the mucous membrane of the mouth. The child was very restless and rigid. Lumbar puncture was done on March 8. Many leucocytes were found in the smear, with an occasional gram-negative diplococcus. The blood count did not reveal any abnormal findings. The platelet count was 250,000.

Purpuras associated with meningococcic bacteriemia are not uncommon. McLean and Coffey(9) have recently reported 32 such cases out of a series of 283 cases of endemic meningococcal infection. According to these authors, the meningococci are found in the cutaneous capillaries where the purpuric lesions are present. Their findings strongly support the contention that the purpura here is due to injury to the capillary wall.

SUMMARY

1. Seven cases of purpura have been reported. Only the illustrative and important findings were abstracted from their records.

2. Since the platelet element of the blood plays an important role in the greatest number of purpuras the primary classification of this syndrome is based on the platelet content of the blood:

(1) Thrombopenic and (2) Non-Thrombopenic.

3. All the thrombopenic purpuras have the associated findings of platelet deficiency, namely, prolonged bleeding time, unaffected clotting time, imperfect clot formation (non-retractility of the clot). The Rumpel-Leede's phenomenon (tournquet test) may or may not be present.

4. In essential thrombopenic purpura the causative agents act selectively on the megakaryocytes. The other elements of the bone marrow (the hemoblasts and the myeloblasts) escape injury. In accordance with this mode of action, the leucocyte count is either around normal or slightly elevated, due to the post-hemorrhagic myeloid stimulation. The red cell count and the hemoglobin are in proportion to the blood lost, i. e., the picture is that of a secondary anemia. In the stained blood films evidence of post-hemorrhagic bone marrow activity is found.

5. The injurious agents may affect all the elements of the bone marrow. In such instances, along with the thrombopenia, a leucopenia with an absolute lymphocytosis and a profound anemia will be in evidence. Such a condition is known as aplastic anemia. Borderline cases may occur which can be considered either as essential thrombopenic purpuras with aplasia, or aplastic anemias in which the purpuric factor is preeminent.

6. In the non-thrombopenic purpuras the hemorrhagic diathesis is due to changes in the capillary wall. The cementing endothelial lining gives way and permits the escape of the vascular contents into the surrounding tissues.

In anaphylactoid purpura it is supposedly brought about by the vasodilatation. In purpuras of this class associated with infection, bacteria have been demonstrated in the capillaries where the purpuric lesions are present.

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DISCUSSION

ROY H. WHITHAM, M. D. (Lincoln): I think we are indebted to Dr. Rubnitz for the bringing of this important subject before us today. I have been interested in the first group he describes, because it offers certain surgical problems for in splenectomy we have an opportunity to relieve or at least ameliorate the condition.

It has been my good fortunate in the last year to see two cases of acute purpura haemorrhagica, in which splenectomies were done. The first was performed by Dr. Hickman of this city, and I had the opportunity of helping him. It was an acute fulminating case, with generalized hemorrhages, in a boy about eight years of age and he completely recovered.

The second was a boy seven years of age on whom I personally did a splenectomy, and the result was not as good. He is today having occasional hemorrhages, but is otherwise in good health.

These cases indicate what may be expected from splenectomy in this type of case. The theory is that the underlying condition is an overactivity of the reticulo-endothelial system which system exists in large measure in the spleen, but also exists in the liver and other organs. Removal of the spleen will eliminate part of the affected system. If the affected tissues are outside of the spleen, then splenectomy cannot be expected to produce a complete cure. I know of no way of determining this before splenectomy. In the second case I cited, improvement occurred but the cure was not complete because all the affected tissue was not removed. It is a condition that we should bear in mind. It requires accurate and prompt diagnosis if surgical intervention is to produce a satisfactory result. Most cases of the acute type which do not receive treatment, either medical or surgical will go to a rapid death. There is another more chronic type in which splenectomy may be undertaken at an optimun time because the condition is not so severe.

We are indebted to Dr. Rubnitz for a good discussion of this interesting subject.

E. B. REED, M. D. (Lincoln): I have enjoyed this paper very much. One thing about the classification of purpuras is this: I do not believe we can accept the classification that is shown so nicely. There perhaps is also a vascular element in every case, to a certain extent. The two shade into each other so that it is hard to pick out the major element. After you do the splenectomy, the thrombocytic count does not come up in all instances. The bleeding does stop. It is the clinical basis for proof the thrombocyte is not the sole element in the production of the disease. As a matter of fact, splenectomy is not generally accepted as the best surgical treatment of the disease in cases of fulminating purpura. However, splenectomy is the best treatment for those that are past the fulminating stage.

DR. RUBNITZ (closing): I do not know that I can add anything. About the role of the spleen, Katznelson bases his theory on the fact that he has observed several large spleens in connection with this disease. He considered thrombopenic purpura as a disease of the spleen primarily, disregarding the blood forming elements. While we agree with the practical therapeutic results of splenectomy, we cannot at the present agree that the spleen is the outstanding causative factor. I have examined several spleens removed for this malady, and could not see anything grossly or microscopically to distinguish these spleens from normal ones. As I have mentioned in the paper, MacCarty draws the same conclusions. One case that I have cited from the literature had a spleen less than half the normal size, and yet the patient suffered from thrombopenic purpura. Splenectomy is not always the preferred method of treatment. Sometimes it helps, and sometimes it doesn't.

I agree with Dr. Reed there is some capillary weakness in all cases of thrombopenic purpura. For the sake of classification, we consider the capillary weakness as of minor secondary importance. The platelet deficiency is the outstanding factor in the so-called thrombopenic purpuras.

TRAUMATIC SURGERY IN A RURAL HOSPITAL*

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In Two Parts—PART I

I was raised on a farm in one of the finest farming sections of southern Minnesota. In the rural community in which I lived accidents were rare indeed. The hired man occasionally sprained his wrist during the first week of corn husking but trauma of a more serious type was almost unknown. One Saturday afternoon Ole Larson was driving the gray colts to town when he met a threshing engine. The colts became frightened and overturned the double buggy and Ole sustained a scalp wound which Dr. Sullivan had to use several sutures in closing. Ole's accident was talked of for months. It happened in September and was still a topic of vital interest when we met in Sever Jacobson's grove to celebrate the next Norwegian independence day which, as every true son of Minnesota knows falls on "settende Mäi" or, as we say in English, May 17th. In fact Ole fairly "stole the show" at this particular celebration. The featured entertainment was a production of the sterling Norse drama, "Til Satyr" in Norwegian. Attendance at this was limited to a very few old country Norsemen who had either known Bjorne Bjorneson in the old country or had friends who knew him. They felt in duty bound to uphold the dignity of Norwegian drama. All the rest of the folks at the celebration preferred to crowd around Ole and have him tell once more just what Doc Sullivan said when "Hay see all da blut on day yacket by jiminy" and the good one Ole pulled on Doc when he felt the sting of the first stitch. The sturdy Minnesotans of that day were adepts in more prosaic arts of plowing corn and shocking oats but they were not so good at ballad making. This, I know, is the only thing that prevented the immortalization of Ole's adventure in a folk ballad equal to the one which perpetuates the memory of Zeb Turney's Gal among the Mountains of Tennessee. As Cabell says in closing the stirring epic of Dom Manuel the Redeemer: "Thus it was in the old days."

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Before coming to Nebraska I spent 14 very busy years in industrial surgery. These years were spent on the Mesaba Iron Range of Minnesota, the Arizona Copper country and the Copper regions of Tennessee during the golden days of metal mining which have now past, I regret to say. Miners and their families have the same general surgical disorders that other people have and, of course, we had our share of them. What we had first, last and all of the time, however, was traumatic surgery of all types, and ability to handle it skillfully and successfully was absolutely essential. Our results were not only scrutinized carefully by the attorneys representing the corporations we worked for but even more minutely by the ambulance chasers who always abound in mining centers. The latter, of course, were anxious to find flaws if possible in order to levy a little heavier blackmail on the employing corportion. I remember a young fellow in Arizona who left the hospital after an injury. Next morning when he reported for dressing some one asked how many lawyers there were in the town. He replied: "Eleven. I walked down the street with this bandage on yesterday and met them all." I cite these facts only to illustrate how necessary it was for us to know our traumatic surgery.

When I located in a rural community in Nebraska I remembered farming conditions as they were in my boyhood. I thought of Ole Larson and how he stole the show at Sever Jacobson's settende Mai celebration and thought I was through with traumatic surgery. I bade an affectionate mental farewell to Balkan frames, Thomas splints, ice tongs and Sherman plates and thought I was through with these tools of my peaceful trade forever. I saw life stretching before me with a line of gallbladders, appendices, and duodenal ulcers. The actual findings were so different from my expectations that this paper is the result. Unlike that classic of primitive American balladry "Frankie and Johnny" it has both a moral and an end.

THE COMMUNITY

Superior, Nebraska, is a typical good farming town located in the valley of the Republican river. It has 3,000 inhabitants and serves a rural community of average population. The town is peculiarly fortunate in hospital facilities. Due to the generosity of The Lady Evelyn Vestey of London and her brother Lewis Brodstone we have the Brodstone Memorial Hospital given to the community as a memorial to their mother, Mathilde E. Brodstone. Mrs. Brodstone was an early settler in Superior and the family were actively identified with the growth and progress of the community. The hospital is one of the finest small hospitals in the Missouri Valley and has a splendid equipment. It has every facility for handling traumatic cases including Balkan frames, a full equipment of splints, x-ray, and a fracture table. The superintendent has had a wide experience in traumatic surgery through her association with industrial hospitals in Minnesota and Tennessee and some of our nurses also have had industrial experience. The whole forms an ideal ensemble for the handling of traumatic surgery and I wish to acknowledge their invaluable cooperation in achieving the results here reported.

CASE SERIES

On my service at the Brodstone Hospital from Jan. 1, 1928, to Jan. 1, 1932, I have handled 291 traumatic cases. They were distributed as follows:

FRACTURES

Head Injuries—		
Basal Fractures	14	(Deaths 6)
Vertex	5	(Deaths 2)
Severe Concussions (No fracture demonstrable)	3	(Deaths 0)
Clavicle	7	
Scapula	2	
Humerus	17	
Radius and Ulna	52	
Carpals	2	
Metacarpals	4	
Sternum	1	
Ribs	9	
Pelvis	3	
Femoral Neck	11	
Femur	14	
Tibia and Fibula	17	
Tibial Tubercule	2	
Femoral Epiphysis	1	
Patella	1	
Olecranon	2	
Spine	1	
Os Calcis	4	
Lower Jaw	3	

Upper Jaw	1
Metatarsals	7
Phalanges (fingers)	7

DISLOCATIONS

Elbow	6
Hip	3
Shoulder	4
Finger	1

AMPUTATIONS

Arm	2
Forearm	1
Foot	1
Fingers	10
Toes	6

Burns	14 (Deaths 2)
Lacerated Wounds	30
Tendon Sutures—	
Achilles	2
Fingers	5
Wrist	2
Foot	1
Hand (extensors)	2
Nerve Sutures (musculo spiral)	1
Nerve Contusions—	
Brachial Plexus	1
Ulnar Nerve	1
Musculocutaneous	1
Osteomyelitis—	
Metatarsal	1
Tibia	2
Gunshot Wounds—	
Abdomen	1
Leg	2
Hand	2
Thigh	1
Semilunar Cartilage	5
Streptococcic Infections—	
Leg	1
Hand	1
Abdominal Injuries—	
Gunshot Wound	1
Contused Intestine	2
Acute Intestinal Obstruction	1
Torn Mesentery	1
Ruptured Gallbladder	1
Herniae—	
Inguinal	3

SUMMARY

Operations on Skull	5
Laminectomy	1
Laporatomies	6
Nerve Sutures	1
Herniotomies	3
Amputations	20
Fractures	176
Tendon Sutures	12

TREATMENT AND RESULTS

Fractures: Results in our series were very satisfactory. Treatment was along established lines. Suspension traction was used in all fractures of the shaft of the long bones of the leg and thigh. It was also used with excellent results in two fractures of the humerus. In one it was used as a matter of choice as the patient was confined to bed by fractures of both legs and the pelvis. In the second it was used successfully to avoid open operation in a difficult fracture in a poor surgical risk. All fractures were radiographed before reduction and all but the simplest ones were checked a few days after reduction. All were reduced under ether anesthesia. Would say that the results secured in this series are an excellent example of the efficiency of properly exercised suspension traction. Although our industrial work gave us ample experience in the operative treatment of fractures only three in the series were operated. One was a patellar fracture and the other two were of the olecranon. Results were good in all. Treatment methods in the series were the same as outlined in a previous paper published in *The Nebraska State Medical Journal* for March, 1928.

Head Injuries: For classification purposes cases showing cerebral injury in which no fracture of the vertex could be demonstrated were classed as basal fractures. Traumatic surgeons have long recognized that severity of brain injury and not type of bony injury determined the prognosis in head inuries. In some of these cases basal fracture could not be demonstrated but severe cerebral injury was as obvious in all as the conclusion arrived at by the Swede in the old Minnesota story who found. on a railroad track, the remains of a friend who had been struck by a fast train. Upon seeing the severed head and dismembered trunk he concluded: "Bay yiminy, sometink mus' happen to Ole."

Basal fractures were not operated unless some special indication such as paralysis arose. Lumbar punctures were used as a routine. Depressed fractures were operated as soon as the condition of the patient permitted which was usually immediately after injury. The deaths in the series will be analyzed later.

Dislocations: All were reduced under ether and immobilized for an average of four weeks. Radiographs were always made before reduction and check pictures in all difficult cases. Results were good.

Amputations: This series presented nothing out of the ordinary with the possible exception of one case done entirely under sodium amytal administered intravenously. This was a high arm amputation. Results were good throughout.

Burns: It is a peculiar fact that in 14 years of industrial work among employees engaged in work around smelters, acid plants, and high tension electricity I never saw a fatal burn. One reason for this is that industrial employees are usually in groups and efficient help is at hand for anyone who is burned. I saw quantities of severe burns from smelter slag, steam, acid and electricity, but no fatalities. In this series which is high for a rural community there were two deaths. Both were from shock due to very extensive burns and took place within 3 or 4 hours after injury. Both fatalities were alone when their clothing caught fire. Results in the other cases were very good.

Tendon Sutures (12): Results in this interesting series were very good. Early repair was made in all cases and approximation secured by mattress sutures of fine silk or fine chromic catgut. A high school boy who is fast as ever in football and basketball after a repair of a completely ruptured tendo achilles and a young farmer who is as good a corn husker as ever after having all his extensors on the right hand sawed through with a wood saw are especially pleasing.

Nerve Sutures: One of the most pleasing results I ever had was a 100% restoration of function following repair of a severed musculo spiral nerve. This case was reported in *The Nebraska State Medical Journal* for January, 1932.

Nerve Contusions: One involved the main cords of the Brachial plexus following a severe injury which included a brain concussion. Recovery was complete after several weeks of supportive splinting. A contusion of the ulnar caused a neuritis of moderate severity for a few weeks but no paralysis. One of the musculo cutaneous nerve was interesting. It followed an automobile accident in which several extensor tendons of the hand on the same side were also injured. So strongly did the loss of function in the biceps resemble an avulsion of the tendon of the long head of the biceps that an exploratory operation was done. The tendon was found intact and function was restored after 4 weeks of protective splinting.

Osteomyelitis: Three cases of osteomyelitis gave a history of injury definite enough to classify them as traumatic. All were operated and recovery was satisfactory in each.

Gunshot Wounds: A rifle bullet wound high in the left side of the abdomen with the bullet ranging upward into the thorax was operated. Patient was standing upright when shot and abdominal contents escaped injury. Two shot gun wounds of the hand caused tissue destruction necessitating amputation of a finger in one case and a fifth finger and corresponding metacarpal in another. A wound from a shot gun at close range went through the heavy muscles of the upper thigh without serious damage. The wound was Dakinized for several days and healed nicely. All gunshot wounds were given tetanus antitoxin.

Semilunar Cartilages: Five cases of fracture of semilunar cartilages were treated. Three gave no history of previous injury. The others had been injured from one to three times previously. All were replaced and immobilized in a cast for 4 weeks. Results were very good and one athletic young man has played football and basketball for three years since his injury. Our experience as a whole shows that these cases usually do well if treated in a cast at the initial injury. Cases with more than one injury often require operation although this series worked out unusually well.

Streptococcic Infections: Streptococcic infection of terrific severity followed two very trivial injuries. A woman of fifty received a slight scratch on the dorsum of the hand. Five days later she was brought to the hospital with a severe infection of hand and forearm and very sick. Continuous hot packs and injections of streptococcic antigens were used until the process localized. Free incision under nitrous oxide anesthesia and Dakin irrigations were then used. The hand improved rapidly and she developed a streptococcic sore throat and finally a facial erysipelas. This responded well to antitoxin and she finally recovered. She was in the hospital sixty days. Function in the effected hand and arm are now well restored.

A young man 19 years old received a slight laceration of the leg while swimming in the Republican river. Three days later he was brought to the hospital with a temperature of 104 and very sick. Continuous hot packs and streptococcic antigens were used and the leg was widely incised under nitrous oxide anesthesia as soon as the process localized and Dakin irrigations instituted. He was a very sick boy for several weeks, ran a severe pyelitis as a complication, finally improved enough to have a secondary suture of the drainage incisions and left the hospital after 71 days. These were two of the most severe infections I ever encountered and we were all delighted to see the patients live.

(To be continued).

NO STRANGER

Small Boy: "I want to see the doctor."

Secretary: "The doctor is out just now. Give me your name."

Boy: "Huh, don't you know your customers? We got a baby here day before yesterday."

THE PATHOLOGY, DIAGNOSIS, AND TREATMENT OF TUMORS OF THE BREAST*

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In Two Parts—PART I

Aside from its relation to obstetrics, the chief importance of the study of the breast is in its relation to carcinoma. The latest United States mortality statistics, which are for 1928, show that in the registration area of this country 109,770 people died of malignant tumors. Of this number 10,056 cases were of carcinoma of the breast. If women only are considered, the death rate from carcinoma of the breast amounts to 16.3% of the malignant deaths. The number of cases would be many more as many of them do not die.

Twenty years ago 80% to 90% of the lesions of the breast seen by surgeons were carcinoma. Now, owing to the education of the public on this subject, about 50% of the cases seen are benign. This makes it necessary to understand the benign lesions as to diagnosis and as to their possibility of becoming malignant later in life. The practice of telling the patient to wait to see if the tumor will grow is all too prevalent. If it be carcinoma this delay often means the ultimate death of the patient: While a radical mastectomy for a benign lesion is not so serious as to life. this unnecessary and extensive operation is inexcusable.

Before discussing the pathological breast a brief review of the structure of the normal gland may be of advantage. This description is based upon Gray's Anatomy(1), Maximow and Bloom(2), Cheatle and Cutler(3), Warren(4), and upon dissections and microscopic study by myself.

The ducts of the breast, numbering fifteen to twenty, arise from the ectoderm and each duct branches out into many ramifications. It is not definitely settled whether the breast is a modified sweat gland or sebaceous gland, having charactertistics of both. It is a structure of considerable activity and varies considerably at different periods of life. There is undoubtedly a rather distinctive microscopic picture for the breast in infancy, between puberty and the menopause, during lactation and in senility.

At birth there are a number of branched epithelial-lined ducts surrounded by connective tissue stroma. Occasionally there may be a dilitation of the ducts with unusual proliferation of their epithelium, with the lumina containing debris of desquamated and degenerated epithelial cells, and occasionally a milk like discharge for a few days. This condition has been called mastitis neonatorum, which is an improper name as the condition is not inflammatory and clears up spontaneously.

Between infancy and puberty the breast is usually quiescent and there is practically never inflammation nor neoplastic changes. At puberty, on the other hand, there is greatly increased activity with marked enlargement of the breast and the addition of two new elements; epithelial lined acini arising by budding from pre-existing ducts and the formation of a characteristic myxomatous rather cellular connective tissue about the terminal ducts and acini. A group of terminal ducts and acini surrounded by this myxomatous intralobular connective tissue, makes up a lobule of the breast. About the lobules is the denser inter-lobular connective tissue, which is merely a supporting tissue and not characteristic of the breast. There is no fat in the intralobular tissue, but between the lobules there may be a large amount of fat. The size of the breast is not a guide as to its activity, but depends more on the amount of fat contained. Except at the terminal portions of the ducts where they widen just before opening on the skin of the nipple and are lined by squamous epithelium, the epithelium is of low columnar type. Because of the nuclei being at different levels in these epithelial cells it often gives the impression of being two layers. The cells get lower as they reach the terminal portion of the ducts and cuboidal in the acini. There is an elastic tissue layer about the ducts which as a rule does not surround the acini. Therefore, one of the best methods of differentiating ducts from acini is to study a section having an elastic tissue stain. It is at puberty and soon after that fibro-epithelial tumors are most common. Also occasionally one or both breasts may greatly hypertrophy at this age. This hypertrophy is of both the connective tissue stroma and parenchyma, but to a greater degree of the former.

The adult breast in a resting stage is more like that of puberty, but in those which have lactated there are more terminal ducts and acini.

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For several days preceding each menstrual period there is often some swelling of the breast which consists of a hyperemia and perhaps oedema of the interstitial connective tissue. During the first half of pregnancy there is a rapid growth of epithelium at the ends of the excretory ducts and secretory portions are formed which are yet devoid of a lumen, the fatty tissue is greatly decreased and there is an infiltration of lymphoid cells in the intralobular connective tissue.

In lactation the stroma largely disappears and nearly the entire breast is made up of secretory acini and their ducts. The section shown is from a woman, age 38, whose third child is three weeks old, and whose breast was removed for a carcinoma in another portion of it. I have seen one case in which lactation hypertrophy was mistaken by the pathologist as being carcinoma and a radical mastectomy advised which the patient fortunately refused.

- Hyperplasia and Neoplasia of the Breast
  - Epithelium
    - Desquamative Hyperplasia
      - Mazoplasia
      - Cystiphorous
    - Neoplasia
      - Benign
        - Fibroadenoma
          - Subepithelial
          - Pericanalicular-
          - Periacinous
        - Pure Adenoma
        - Papilloma
      - Malignant.................................... Carcinoma
  - Connective Tissue
    - Benign
      - Fibroadenoma
      - Fibroma
      - Lipoma
      - Myxoma
      - Angioma
    - Malignant....................................Sarcoma

In senility there is atrophy of both epithelium and connective tissue. The main atrophy, however, is of connective tissue so that in some cases it almost entirely disappears. As the breast tissue disappears it is often replaced by fat.

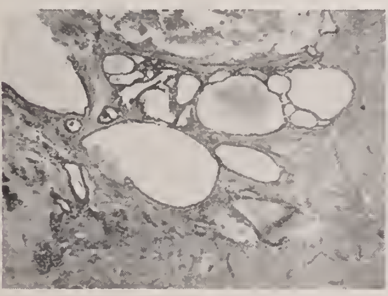
There is a tremendous diversity of opinion and of nomenclature of the pathological lesions of the breast. I am giving the classification of Sir Lenthal Cheatle which seems to me to be an excellent one.

The condition he names mazoplasia is commonly called chronic mastitis. The term mazoplasia, however, seems better as the condition is not inflammatory. Cystiphorous dequamative epithelial hyperplasia has various names as chronic cystic mastitis, senile parenchymatous hypertrophy, Schimmelbusch's disease, "Maladie de Reclus," etc.

As a study of the pathological lesions of the breast I am using case reports with clinical and pathological descriptions. Three of these patients were operated by B. B. Davis and the others by me. I made a very careful gross and microscopic study of each, obtaining sections from different parts of the breast and using many types of stains. One case, that of sarcoma, was operated by me at the University hospital and the others were in our private practice.

The first case is Mrs. C. M. N., office number 4045, age 25, who began menstruating at the age of 13 and there has always been definite dysmenorrhoea. She has been married several years, but has never become pregnant. Ever since the onset of menstruation she has had a diffuse aching pain with swelling and a hard feeling of both breasts coming on seven to ten days before her menses, lasting during the periods and for a few days afterward. At that time she states there was always a nodular feeling all through the breasts, but no distinct lumps. The breasts became very tender. The aching in the breasts never entirely disappeared, even between the menstrual periods. Examination showed a fine nodularity diffusely through both breasts but no distinct tumors. The breasts were slightly enlarged, quite tender, and transillumination showed a generally increased density. There was no change of the skin, nipples or lymphatics. Vaginal examination revealed a retroflexed uterus with a tender enlargement to the right, which on operation was found to be a chocolate cyst of the right ovary. She has been put on ovarian residue tablets with a dosage of five grains three times daily, beginning two weeks before the menstrual period and stopping with the onset of the period. The diagnosis is mazoplasia or what is commonly termed chronic mastitis. I have no microscopic section as no operation was done on her breasts.

In this condition Cheatle states there is desquamation of epithelial cells in the ducts and acini accompanied by hyperplasia of the periductal and periacinous connective tissue. The shed epithelial cells accumulate in and distend the ducts and acini, causing diffuse pain, generalized nodularity, and increased density as shown by transillumination. The normal physiological hypertrophy of the mammary gland is probably due to the corpus luteum of menstruation or of pregnancy. During the pre-menstrual stage, which is the time of proliferation of the corpus luteum, the epithelial hyperplasia is most marked and has been produced experimentally in animals by injection of corpus luteum. On this basis, in order to balance the action of the ovary better, Max Cutler has proposed treatment by ovarian residue. He reported fourteen cases treated in this manner, twelve showed excellent results, one a temporary improvement and the other no effect. In most cases of mazoplasia there is ovarian insufficiency as shown by short duration and scanty flow at the menstrual periods. Cheatle believes this condition purely physiological and a separate entity from so-called chronic cystic mastitis. Mazoplasia is not surgical, responds fairly well to ovarian residue and disappears at the menopause. It may occur at any age from puberty to the menopause and between thirty and forty a large proportion of women, especially those who have born children, have mazoplasia.



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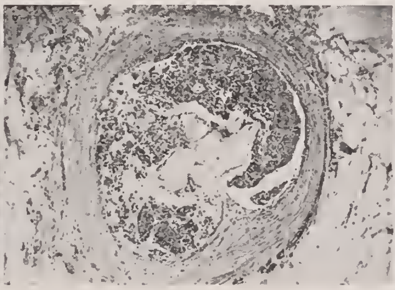

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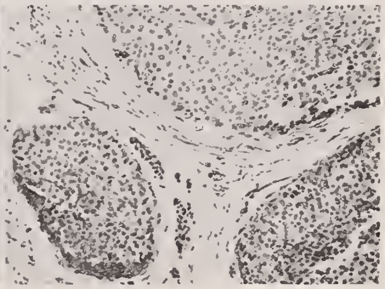


3.

Fig. 1. Mrs. E. H Age 47. Cystipherous desquamative epithelial hyperplasia. X 30.

Fig. 2. Mrs. R. B. Age 64. This area shows duct papilloma with adenoma probably secondary to it. X 78.

Fig. 3. Mrs. R. B. Age 64. Same case as preceding. Several groups of epithelial cell have broken through the basement membrane. Diagnosis: Duct carcinoma. X 120.

An example of another condition is the case of Mrs. E. H., Immanuel hospital, 41719, age 47, who noticed a lump in the right breast three months ago. It had not increased in size and had not been painful. However, for a long time both breasts had been more or less sensitive. Examination revealed a small circumscribed lump in the upper, outer quadrant of the right breast, which was freely movable and not tender. There was no enlargement of the axillary lymph glands, no change in the size of the breast, no retraction of the nipple or dimpling of the skin. Unfortunately, transillumination was not done. December 21, 1931, a simple right mastectomy was performed by B. B. Davis. On cutting down to the mass it was found to be encapsulated and of a definite blue color. It was a cyst with a thin wall containing slightly yellow, serous fluid, and the lining of the cyst was absolutely smooth. In studying the sections microscopically there were several small cysts found in addition to the large one lined by cuboidal epithelium and some of them contained necrotic material in their lumina. In small areas the epithelium was absent. There were areas in which the terminal ducts were somewhat dilated, while in other places they were normal size. The lining of the epithelium was columnar and definitely folding inward in places. There seemed to be no especial abnormality of the stroma. The diagnosis was cystiphorous desquamative epithelial hyperplasia, or as it is more commonly called chronic cystic mastitis.

This case is rather typical of this lesion. This process begins as a desquamative epithelial hyperplasia which ends in the formation of cysts. Cheatle considers it a separate entity from mazoplasia. This section shows a beginning papillomatous formation in the terminal ducts which is a rather common sequence of events. These papillomatous areas may later become carcinoma and because of this termination, this condition must be carefully observed. The differential diagnosis between this and mazoplasia is that this usually occurs at a little later age, usually after 25 or 30, and that, besides a nodularity of the breast, there are definite cysts which are usually palpable and which are readily shown up by trans-illumination. There may be a single cyst, multiple cysts, or a localized nodularity in the breast. When a single cyst, it is freely movable its walls are smooth and sharply defined and sometimes fluctuation may be found. The fluid contained is usually clear, occasionally cloudy, but never hemorrhagic. If the fluid is clear it will transilluminate light. The cyst walls are smooth and there is no glandular enlargement. There is no discharge of blood or serum from the nipple, and unless the cyst becomes infected there is no retraction of the nipple. The practice of aspirating a cyst to examine the character of its contents is somewhat dangerous, as in case of a malignant cyst carcinoma cells have been transplanted along the course of the needle puncture.

In the early stages of cyst formation there may be some pain, but this usually disappears when the cyst is large enough to be clinically obvious. A single large cyst rarely becomes carcinomatous; it is the small cysts which are most likely to undergo this change. In case of multiple cysts, there may be a multinodularity, which nodules are small, round and of somewhat slippery feeling and elastic on palpation. It does not appear as a uniform nodularity as in mazoplasia, as a few cysts have generally become large enough to palpate. They may be confined to a segment of a breast, or occasionally be bilateral. The localized nodularity may exist in a similar way. These cysts must be differentiated from galactocele, dermoid cysts, cystic degeneration of fibro-adenoma and of carcinoma.

(To be continued)

TRANSURETHRAL RESECTION OF PROSTATE*

THOMAS D. BOLER, M. D.,
From the Department of Urology, Creighton University,
Omaha, Nebraska.

In presenting this paper on a newer method of attack of an old and not overwhelmingly successful problem, I do so with the necessary apologies.

I realize full well that my series of cases, limited to twelve, does not constitute the full scope of this procedure, but if this paper opens a discussion and kindles a desire for work in others, it will have justified its reading.

So much has been written enthusiastically for and the criticism bitterly against this method, that we are well on our way to decided progress as to its scope and use. Beginning with the punch, we have marked each succeeding step up to the present resectoscopes, all involving the same principle but with their varying cautery, coagulation, fulgeration, dessications, cuts or combinations of both.

Much of the criticism has come from the general impression prevailing that it is just a little more than an office procedure. Let me state emphatically, nothing is further from the truth. It is decidedly a major procedure demanding all the care both pre- and postoperative of the prevailing prostatectomies.

The operator must have a clear and concise knowledge of the posterior urethra and vesicle neck and that knowledge must be obtained by the use of the instrument with which he does his operative work.

The desire to remove all the prostate tissue is quite naturally instilled in all. The object in resection is to remove the obstructing tissue and sufficient surrounding tissue to prevent or minimize the danger of recurrence. This is a question of judgment of the operator from his knowledge of the obstructing forces and previous experience with his cutting and coagulating current.

The question of immediate hemorrhage is always a threat, but can be controlled by coagulation at the time of the cut and there should be no bleeding when the operation is completed.

A large size catheter is placed in the bladder through the scope and left in place. I believe in almost continuous irrigations to prevent the formation of clots in the bladder, which cause most of the early secondary hemorrhage. This should be kept up from twelve to twenty-four hours.

Infection, which has followed in some cases, with resulting death occurring from a pyonephrosis, usually occurs a few weeks or months after the operation. While infection is apt to occur in any case, it seems to me, that if closely followed, we would find that it occurs mostly in those cases in which the patient had a large, boggy, infected prostate. This is the case, I believe, in which we have most of our difficulties, regardless of what method we follow.

In my estimation, there is a tendency by all to operate in these cases too soon and they should be drained for never less than four or six months before operation. If this were more closely adhered to, it is possible our prostatic mortality might be even less by all methods. It is almost unnecessary to state that all the preoperative care given any other prostatectomy is also necessary in these case, plus a repeated clotting time. This, I think, is important.

My experience has been with twelve cases varying in ages from seventy-three to eighty-seven years of age. In this group were two median bars, one fibrosis, one carcinoma, three median lobe involvements and five adenomata. One death occurred two months following the operation from an acute retention. This death might have been avoided by the removal of more tissue. He was an exceedingly poor risk at eighty-three years of age. I feel the death should not be classified as caused by operation. One case of epididimitis and one peri-uretheral abscess.

---

*Read at staff meeting, St. Catherine's Hospital, September 21, 1932.

None of the twelve were what one would consider a good surgical risk for any prostatic work, excluding the two median bars. These patients were not selected but were taken in the general routine of cases. Ten were given sacral block, one spinal and one ether. Varying amounts, from four to sixteen grams of prostatic tissue were removed, as the case in my opinion demanded. These cases have all recovered with one exception. Of these twelve. seven of them could not have withstood a prostatectomy and they are comfortable today.

I hope I am not leaving the impression that nothing can happen to these patients, because my small series has been a favorable one. Certainly. many of them will die and the various complications will arise in any given number of cases, but by this method the amount of shock is lessened, the stay in bed and the hospitalization is shorter. Greater risks in old men have and can be taken with a higher degree of safety and a more comfortable outlook for the future of the patient.

With all due respect for the wonderful records of many operators, I have never been able to find out just what is the mortality of prostatic surgery. It is probably due to the wide variance of opinion of the writers. It is within reason to believe the mortality is somewhat higher with the resectoscope now, than it will be in the future. But. even with its present mortality, from what I know of my own cases and from those I have been privileged to see with others, I am sure the mortality is decidedly lower than any other method.

IN CONCLUSION:

1. This procedure, while still in its infancy, so to speak, has established itself as the method of choice in all cases of vesicle neck obstruction, with the possible exception of the boggy, infected prostate and in the hands of the inexperienced, the grade four prostate.

2. In the aged man whose physical condition is poor and whose expectancy is definitely limited.

3. It is not a minor operation without its dangers to be performed by one without the necessary visual knowledge of vesicle neck obstruction.

4. In carcinoma of the prostate.

5. The minimum amount of shock.

6. The length of hospitalization and the patient is ambalatory most of the time.

7. In patients suffering from a physical disability, whose condition is such that any other procedure is contraindicated. (Heart, asthma, arthritis, etc.).

8. It is not a flash or fad but a definite advance in the handling of most of our prostatic problems.

I want at this time to thank the sisters and nurses for their wonderful cooperation and the interest they have shown. and to the doctors, who referred these cases, I owe an unredeemable thanks.

THE MEASURE OF A MAN

Not—
    "How did he die?"
But—
    "How did he live?"
Not—
    "What did he gain?"
But—
    "What did he give?"
    These are the units
        To measure the worth
    Of a man, as a man
        Regardless of birth.
Not—
    "What was his station?"
But—
    "Had he a heart?"
And—
    "How did he play
        His God-given part?"
    Was he ever ready
        With a word of good cheer,
    To bring back a smile,
        To banish a tear?
Not—
    "What was his church?"
Nor—
    "What was his creed?"
But—
    "Had he befriended
    Those really in need?"
Not—
    "What did the sketch
    In the newspaper say?"
But—
    "How many were sorry
    When he passed away?"

—Albert Hayes.

Nurse (at insane asylum): "There's a man outside who wants to know if any of the male patients have escaped lately."

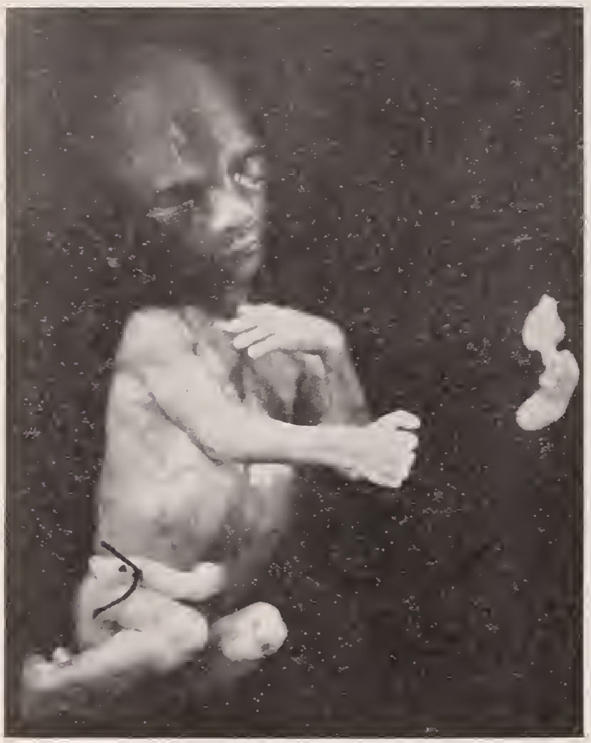
Doctor: "Why does he ask?"

Nurse: "He says somebody has run off with his wife."

SUPERFETATION: CASE REPORT*

GEORGE M. HANSEN, M. D.,
Madison, Nebraska.

A man called me to his home stating that his wife was having a mis-carriage. She had had pains most of the night and he thought the membranes had already come. Nothing had been done to cause the abortion as both he and his wife wanted children. When I arrived the product of conception was in the bed and she had had no pains since it came. In the debris there were two membranous sacs, the largest about six inches or fifteen centimeters long and oval in shape contained a fetus which I could see through the membrane, the other sac was about as large as a chicken egg. They were connected in no way nor could I tell which sac came first. This was September 22, 1932. The first day of the last menstruation was June 7, 1932. The fetus in the larger sac was about three months advanced. In the smaller sac I found a fetus about four weeks old. It was seven-sixteenths of an inch or one centimeter in length, the arm and leg buds present but no finger or toe buds, the heart buds were still visible on the chest. The eyes showed as black dots, the remains of the yolk sac still visible. The two fetuses are shown in the accompanying illustration.



The mother is of small stature, about four feet tall, weighing ninety pounds, thirty-one years old. She had one full term pregnancy male child, weight seven pounds, which died shortly after birth due probably to birth injury as it was a forceps delivery. Physical examination revealed nothing except a badly lacerated cervix which probably accounts for the abortion.

Is superfetation possible in a normal uterus? There is very little about it in literature. Superfetation is said to take place when two or more ovules belonging to successive periods of ovulation are impregnated, so that a woman who is already pregnant becomes again pregnant a month or more later and carries simultaneously in the uterus both these products of conception. Thus, a second ovum is fertilized after the first has been developing for a month or more and the two fetuses continue to develop simultaneously and independently.

Hippocrates(1) and Aristotle wrote of superfetation. Pliny speaks of a slave who bore two infants, one resembling the master, the other a man with whom she had intercourse, and cites the case as one of superfetation. According to Beck(2), Brassavolus, who lived between 1500 and 1555, said that he had known superfetation to be epidemic. Lusk says, "That impregnation can take place at two periods distant from one another—must be regarded as an inadmissible hypothesis, until physiologists shall succeed in demonstrating in a single instance, by the presence of corpora lutea of different ages, that ovulation ever occurs during pregnancy. An apparently unassailable case is one reported by Cosentino: "A woman in the sixth month of pregnancy died of heart disease. The ovaries were subjected to a careful microscopic examination, and in them were found follicles in all stages of development, also one ruptured follicle of a diameter of fifteen millimeters with ragged margins and a rich arterial and venous network surrounding the theca folliculi. Between the granular layer and a lot of detritus a perfectly mature ovum with all of its elements was found." (Quoted by Herzog).

I will state in conclusion that while I cannot prove physiologically that two corpora lutea of different ages were present, it is a condition and not a theory that confronts us and this case is undoubtedly one of superfetation.

REFERENCES

1. Anomalies and Curiosities of Medicine, page 46.
2. Reference Handbook of Medical Sciences, Volume VII, page 24.

PHARMACOLOGY AND MEDICAL SCHOOLS

Charles W. Edmunds, Ann Arbor, Mich. (*Journal A. M. A.*, Aug. 9, 1930), reviews the status of pharmacology in the curriculum of the medical school and its influence on the practice of medicine. He says: Imagine a physician with a training covering four years, such as is given in a modern medical school, followed by one or two years' internship, receiving a letter from a pharmaceutic firm telling him that "he should refer his medical problems to them." Who are the members of the staff of the firm who shall settle the problems of the physician for him? How reliable and how unbiased will be the therapeutic advice which he will receive? Such a letter is an insult to the profession, but physicians are so used to them that they fail to arouse even a mild state of irritation. The Council on Pharmacy and Chemistry tries to insure that the advertising matter of its accepted products shall contain no incorrect or false information; but who act as critics of the great mass of medical advertising literature which daily floods the mail? And yet it is from such sources that the average physician takes his graduate training in therapeutics. If, perchance he is a visiting physician in a hospital or a teacher of medical students, he hands on this commercial therapeutic misinformation with the result indicated in the state board comments which have been quoted. Another effect of this flood of advertising matter which daily clutters the physician's mail. and an effect which is largely overlooked, is the influence which it has on the physician himself. He is trying to the best of his ability to practice scientific medicine and he wants to employ the best and most reliable remedies obtainable. He must, therefore, try to appraise the value of these remedies by daily experience with them in his practice; but even before he has learned the advantages or drawbacks of one of the hypnotics, let us say, along comes a circular describing another with a different side chain which, it is claimed in a loud tone, gives the compound greatly increased efficiency with lessened toxicity and absence of side effects. What is the physician to do? He must keep abreast of the times, so at the expense of his own independence and of his scientific training he must use the new compound. The more adroitly the circular is phrased, the more will it make him feel his sense of inferiority and his need of the new side chain; when, lo, before the excellencies of this new drug are exhausted, another circular is thrust into his mail box, and the elevating process has to be started again. This is no fanciful picture. In fact, only a few days ago it was pointed out that in two years (1926-1928) in Germany no less than thirty-five "new" antineuralgic and hypnotic combinations were introduced. This was practically one "new" preparation every three weeks, and all having practically the same action. Imagine the effect on the mentality of the physician who has to try to select the best remedy for his patient. After all, the pharmacologist cannot be held responsible for instruction in practical therapeutics. In only rare instances does he have access to the clinic. The internists. then, whether they will or no, must give such training. If the practical therapeutic knowledge of recent graduates is limited to proprietary preparations. his clinical teachers are responsible. Their methods of practice are reflected in their students. "By their fruits ye shall know them." And yet it is absurd to say, as was said recently, that the pharmacologists are not "especially concerned with the immediate or practical application of their results." It may be true, as was said in a derogatory manner recently, that the pharmacologists are physiologically trained or minded; but it might be pointed out that it is also the tendency today for the modern internist to try to solve his clinical problems on a physiologic basis, so that he, too, today is more and more physiologically minded, if he is keeping abreast of modern medicine. Pharmacology, standing as it does midway between the preclinical medical sciences and the clinical subjects, occupies a unique position. Besides furnishing its own special contribution to scientific practice, it helps to bridge the gap between the normal and the pathologic, frequently aiding in an understanding of the latter, and it may furnish the rational basis for the remedial agents, as it has so often done before.

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*Presented before the Madison Six County Medical Society, Norfolk, October 13, 1932.

KEEPS THE BEST

The doctor of a country village had two children who were acknowledged to be the prettiest girls in the district.

While the two children were out walking one day, they happened to pass two small boys; one lived in the village and the other was a visitor.

"I say," said the latter, "who are those little girls?"

"They are the doctor's children," replied the village boy. "He always keeps the best for himself."

AND THY NAME IS WOMAN

Doctor: "I would advise you, madam, to take frequent baths, get plenty of fresh air, and dress in cool gowns."

Patient's Husband (an hour later): "What did the doctor say?"

Wife: "He said I ought to go to Palm Beach and then to the mountains. Also that I must get some new light gowns at once."

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Christmas After All

Each year we set our nicest light
Right in our biggest window, right
Where all the rest can see.
We put it there, and this is why:
It helps the people passing by
To their own Christmas tree.

And there are some perhaps who do
Not have a tree like me and you
Perhaps some gray old man;
And so I think we ought to make
Each Christmas Eve, for someone's sake,
As Christmas as we can.

If all the people in the town
Would put their curtains up, not down,
Although their house is small,
Then ev'rybody's Christmas Eve
Would be, I really do believe
Like Christmas after all.

—DOUGLAS MALLOCH

THE REPORT OF THE COMMITTEE ON THE COST OF MEDICAL CARE

The labors of the Committee on the Cost of Medical Care undertaken five years ago, have been completed and an advance copy of the report which was scheduled for release November 29, is acknowledged by this *Journal*. The report covers about sixty-five printed pages and discusses at length the reasons for the conclusions reached.

The recommendations of the committee are not clearly defined but suggest an approach to socialized medicine of a sort. A minority report follows the report of the general committee and both are herewith published.

This *Journal* may in subsequent issues publish other and fuller portions of the report with comments.

RECOMMENDATIONS OF THE COMMITTEE

I

The Committee recommends that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists, and other associated personnel. Such groups should be organized, preferably around a hospital, for rendering complete home, office, and hospital care. The form of organization should encourage the maintenance of high standards and the development or preservation of a personal relation between patient and physician.

II

The Committee recommends the extension of all basic public health services—whether provided by governmental or non-governmental agencies—so that they will be available to the entire population according to its needs. This extension requires primarily increased financial support for official health department and full-time trained health officers and members of their staffs whose tenure is dependent only upon professional and administrative competence.

III

The Committee recommends that the costs of medical care be placed on a group payment basis, through the use of insurance, through the use of taxation, or through the use of both these methods. This is not meant to preclude the continuation of medical service provided on an individual fee basis for those who prefer the present method. Cash benefits, i. e., compensation for wage-loss due to illness, if and when provided, should be separate and distinct from medical services.

IV

The Committee recommends that the study, evaluation, and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

V

The Committee makes the following recommendations in the field of professional education: (A) That the training of physicians give increasing emphasis to the teaching of health and the prevention of disease that more effective efforts be made to provide trained health officers; that the social aspects of medical practice be given greater attention; that specialties be restricted to those specially qualified; and that postgraduate educational opportunities be increased; (B) that dental students be given a broader educational background; (C) that pharmaceutical education place more stress on the pharmacist's responsibilities and opportunities for public service; (D) that nursing education be thoroughly remoulded to provide well-educated and well qualified registered nurses; (E) that less thoroughly trained but competent nursing aides and attendants be provided; (F) that adequate training for nurse-midwives be provided; and (G) that opportunities be offered for the systematic training of hospital and clinic administrators.

RECOMMENDATIONS OF THE MINORITY GROUP

I

The minority recommends that government competition in the practice of medicine be discontinued and that its activities be restricted (a) to the care of the indigent and of those patients with diseases which can be cared for only in governmental institutions; (b) to the promotion of public health; (c) to the support of the medical departments of the Army and Navy, Coast and Geodetic Survey, and other government services which cannot because of their nature or location be served by the general medical profession; and (d) to the care of veterans suffering from bona fide service-connected disabilities and diseases, except in the case of tuberculosis and nervous and mental diseases.

II

The minority recommends that government care of the indigent be expanded with the ultimate object of relieving the medical profession of this burden.

III

The minority joins with the Committee in recommending that the study, evaluation, and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

IV

The minority recommends that united attempts be made to restore the general practitioner to the central place in medical practice.

V

The minority recommends that the corporate practice of medicine, financed through intermediary agencies be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained high quality of medical care, or unfair exploitation of the medical profession.

VI

The minority recommends that methods be given careful trial which can rightly be fitted into our present institutions and agencies without interfering with the fundamentals of medical practice.

VII

The minority recommends the development by state or county medical societies of plans for medical care.

"Now your husband must live on milk for a month."

"He says milk is no food."

"Babies live on it."

"Then it's all right, doctor. He's a big baby."
—Louisville Courier-Journal.

VOLUME SEVENTEEN

This number completes Vol. XVII of *The Nebraska State Medical Journal.* It is almost impossible for those who attended its birth, to believe that seventeen eventful years have elapsed since the *Journal* was launched.

During the years the magazine has been enlarged and improved in a number of ways, so that today it is quite a respectable magazine, comparable with any of the thirty or more state medical journals.

During the fat years of the post-war era the publication board accumulated a handsome fund of upward of five thousand dollars against an evil day that might come, but which was not expected.

Within the past few years advertising has fallen off tremendously and during the current year the income has not been enough to take care of quite all the expenses. The profession will therefore appreciate the far-sightedness of the board in creating a fund against a possible emergency.

The reader can therefore rest assured of the permanency of the *Journal* and that it will continue to appear practically unhampered by the economic stress.

TRAUMATIC SURGERY IN RURAL COMMUNITIES

Apropos of an article—Traumatic Surgery in a Rural Hospital—published in this number, it may be well to stress the increase of accidents in rural communities and the advisability of attempting to educate the rural sections to a sense of accident prevention consciousness. The automobile and farm tractors have taken a large toll in accidents in recent years.

In Lloyd Noland's excellent article in the *Journal A. M. A.* of October 8, he stresses the fact that in their Tennessee Coal, Iron and Railway hospital they have more accidents among their employees off the job than on it. Henderson of the Mayo clinic recently called attention to the enormous increase in recent years of recent fracture cases in the clinic. He too noted that accidents were greatly on the increase in farming communities. Moorehead of New York had a paper along the same trend at the recent Inter-State meeting at Indianapolis.

The advisability of taking steps toward meeting this condition is suggested. The possible steps are:

Training in traumatotherapy for general surgeons not adept in the work.

Intensive training in accident surgery in medical schools.

Careful schooling of internes by some surgeon on the hospital staff who is well grounded in traumatic surgery.

A statewide campaign to promote the development of accident prevention consciousness among the laity.

ANNUAL CLINIC DAY AT BRYAN MEMORIAL HOSPITAL

The third Annual Clinic Day of the Bryan Memorial Hospital of Lincoln, was held on October 28th. Eighty-five out-of-town doctors were among the guests of the Hospital Staff and the Board of Trustees.

Dr. Arthur F. Abt of Chicago, discussed the subject of the "Use of Carbohydrates in Diet and Treatment of Infants." He reviewed the physiology of carbohydrates giving examples of the use of the different carbohydrates in normal and abnormal states. He gave an exhaustive resume of a newer knowledge of this subject in a pleasing, interesting manner.

After a buffet lunch, Dr. Allen B. Kanavel of Chicago, in a classical style, discussed "Infections of the Hand." He pointed out the importance of determining whether the infection is of lymphatic spreading or pus accumulating type, for only in the latter should incision be made. He described in detail the fascial spaces and demonstrated the incision with which best to approach each of them. Stressing the importance of early incision of tendon sheath abscesses, preserving the tendon, he outlined the importance of diagnostic points and localizing the abscess. After the abscess of the hand is opened carefully, aseptic dressing should be done in order to prevent mixed infection which is responsible for sloughing of tendons.

Dr. Jennings C. Litzenberg, Professor of Obstetrics and Gynecology, University of Minnesota, discussed the common types of hemorrhage occurring in obstetrical practice and outlined the conservative management of these conditions. He stressed the point that the death rate could be materially reduced through adequate pre-natal care, and that the maternal mortality in this country can only be lowered through the efforts of the general practitioner. Dr. Litzenberg used his own fetus example and showed how through providing pre-natal care the maternal death rate had been markedly reduced.

Dr. Eugene Wolcott of Des Moines, Iowa, discussed the newer methods of treating arthritis. He laid particular stress on the various types of arthritis and the pathology they caused and gave an excellent resume of his experience in the use of vaccine therapy, particularly autogenous vaccines made from foci of infection to which the patient shows inadequate immunity. He also related his experience with stock vaccines used in conjunction with and without autogenous vaccine in very small doses, thereby avoiding those general reactions to which we are usually accustomed. In his experience and those of others, these methods have usually given the patient suffering from arthritis considerable relief.

Dr. Walter C. Alvarez of Rochester, Minnesota, addressed the assembly in the evening on the subject of "Upper Abdominal Pain." In his characteristic jovial and interesting manner he graphically pictured the many possibilities of mistaken diagnosis in cases of upper abdominal distress, drawing attention also to the many mental and psychical as well as physical conditions that cause simulation of upper abdomen disease that go to the operating table only to find there is no pathology.

—J. E. M. Thomson, Lincoln.

A STUDY OF APPENDICITIS

Outline notes on appendicitis and a review of three hundred and forty-four cases from the records of Bryan Memorial hospital, Lincoln, by Dr. David C. Hilton and Dr. Miles J. Breuer presented before the staff meeting last March lies before us. It is a mimeographed folio of 22 pages and indicates an immense amount of detail labor.

The results of the study show the following mortality data:

For all operated cases	89/100%
For primary acute cases	1 15/100%
For suppurative, gangrenous and perforative cases	2 8/10%

In 337 consecutive cases of appendicitis there were 3 deaths.

Analysis of deaths:

1. A clean case died of cardiac embolism.

2. A fulminating case with abscess died of hemorrhage.

3. A fulminating case died of paralytic ileus.

NOTES FROM THE ST. LOUIS COLLEGE OF SURGEONS MEETING

The 22d Annual Clinical Congress of the American College of Surgeons was held at St. Louis October 17 to 21. There was a very fine attendance considering the depression.

The mornings were mainly taken up with clinics in the various St. Louis hospitals. These clinics were of especially high order and very carefully planned. They were diversified so that the surgeon could select any type of work he wished.

In the afternoons there was a choice between the hospital clinics and large general meetings, in which the surgical leaders in this country took part.

Large afternoon meetings consisted of symposia on various subjects. One was on the teaching of surgery and surgical specialties, another on the treatment of fractures. Among other things in this symposium, Dr. Paul B. Magnuson of Chicago pointed out some of the principles underlying the treatment of fractures, showing how to simplify the treatment. Dr. C. R. Murray gave an excellent discussion on "The Exact Role of Physical Therapy in the Treatment of Fractures." He showed the principle of increasing circulation with a decrease in pain of the part, which makes it possible for the parts to do active motion earlier.

Another afternoon symposium was entitled "Cancer Is Curable." A group of our leading authorities, each on various types of cancer, reported statistics on their five year cures. These statistics gave one an optimistic attitude toward the early treatment of cancer.

The last afternoon the symposium was on industrial medicine.

Monday evening was taken up with the Presidential Meeting, with some excellent general addresses including "The John B. Murphy Oration in Surgery" by Sir William I. DeCourcy Wheeler of Dublin, Ireland.

Tuesday evening Dr. Harold Brunn of San Francisco described his operation of lobectomy in one stage for the treatment of bronchiectasis. He showed excellent results, but it is questionable if a one-stage operation is advisable. Dr. Joseph A. Danna of New Orleans, in a discussion of empyema thoracis, claimed very remarkable results by simple aspiration and replacement of an equal amount of air through a syringe from the time the fluid begins to collect. In most of his cases he did not have to do any other drainage.

Wednesday evening was made up of a discussion of cancer of the cervix and the treatment of functional uterine bleeding. The last half of the evening was taken up by two papers on fractures.

Thursday evening articles were given on diverticulitis of the large bowel, carcinoma of the colon and appendicitis. Dr. J. M. T. Finney, Jr., of Baltimore in reviewing four thousand appendectomies, and also the discussion by John O. Bowers of Philadelphia, showed that, after the first two days, the safest time to operate was about one week after the onset of appendicitis. Sir Lenthal Cheatle of London discussed inflammation and pointed out that repair was not part of the process of inflammation.

The last evening was for the induction of new Fellows. Dr. F. L. Wilson, Stuart, was the only new Fellow admitted from Nebraska.

There were also meetings for the discussion of hospital management, a very large public meeting and movies of different surgical conditions constantly going on. The section on ophthalmology and otolaryngology had their own meetings which I am not prepared to discuss.

Dr. W. D. Haggard of Nashville, Tenn., was elected president.

On the whole it was a very excellent meeting.

—Herbert H. Davis, Omaha.

MEDICAL MALPRACTICE

There is an oft repeated story about Roscoe Pound in the University of Nebraska circles characteristic of this remarkable man. Often when reaching his classroom at the Law College, it was expedient for him to adjust his focus on the class. During this period he promulgated philosophies. One of his pet admonitions to the class was: "In your relations with clients you should assume that all are honest but you should conduct yourself in such a manner that it does not make a bit of difference whether they are or not."

I cannot think of any better admonition to the medical profession for the prevention of malpractice.

I am called in conference time and again in malpractice suits and threatened suits, and it is the exception and not the rule wherein another doctor has had anything to do with the promulgation of the suit. And it is the rule almost without exception that an attorney has not promoted the suit.

When will the doctors of Nebraska come out of their misconceived notions and meet this problem squarely?

The whole problem in contractural. The implied contract is: The physician will not fail to do what a reasonably prudent physician would do under the circumstances and not do what a reasonable prudent physician would not do under the circumstances.

The term negligence and carelessness are, legally, to a very large degree, interchangeable. In medicine physicians consciously or unconsciously differentiate the meaning.

Negligence in law is doing something that a reasonably prudent person would not do under the circumstances or failure to do something that a reasonably prudent person would do under the circumstances. In my opinion NEGLIGENCE is a result. The CAUSE is carelessness. I have defined carelessness to be 'that attribute of physical, mental or moral character that inhibits or excludes the effort, or the act that would prevent a known danger, producing disaster, and, or an undesirable happening or event.'

In my opinion malpractice is the result of carelessness.

This carefulness requirement, to me, seems simple. This requirement is all that the law asks. This requirement is not unreasonable. Why does the medical profession persist in doing things that violate this requirement? Why does the medical profession waste time energy and money endeavoring to evade this simple, just and common sense requirement?

Time, energy and money have been spent lavishly endeavoring by society and other legislation to prevent malpractice suits. If one hundredth of this energy, time and money were used to prevent carelessness, the malpractice problem would be a negligible quantity today.

Every hospital record, which includes laboratory, consultant records and post mortem records, is available for use in suits for malpractice. In a number of cases in late years and some now pending the hospital and post mortem records will be sufficient to get the case to the jury.

We have, by legislation, put the osteopath and chiropractor in a position to testify against the medical physician. In the Lancaster District Court we find an attorney who has acted as a lobbyist for the Nebraska State Medical Association. in the legislatures, appearing for the plaintiff in a malpractice suit. That he is a good attorney goes without saying, otherwise the Nebraska State Medical Association would not have employed him. I mention this, only to prove my contention that what is needed for the medical profession is more discipline and knowledge and less politics and legislation.

This may not be pleasing conversation but until physicians accept the responsibility and requirements willingly and meet the challenge, malpractice suits will continue, insurance or no insurance, conversation or no conversation, committees, or no committees, back slapping or no back slapping.

Human nature is very much the same today that it was a hundred years ago, but education has put a keener edge on human nature. The sooner doctors realize that they are only one of many units in the social order, and subject to the same laws as other units of the order, the better it will be for them and the social order. Malpractice suits are, in 98% of the cases, due to failure to recognize and be guided by the law. There are no institutions greater than the medical profession, EXCEPT GOD AND THE LAW. Why not recognize it and be guided by it?

—Czar Johnson, Lincoln.

A LOOK AT THE POSTGRADUATE MEDICAL ASSEMBLY

From the standpoint of attendance, interest and excellency of program the meeting of the Interstate Postgraduate Medical Association held at Indianapolis from October 24th to 28th was one of the most successful in the history of this organization.

The general arrangements were excellent. All meetings were held in the Murat Temple which has a seating capacity of twenty-four hundred. By the use of a lapel microphone and loud speaker every word could be distinctly heard in all parts of this vast auditorium.

Directly communicating with the auditorium was a large commodious hall in which the technical and scientific exhibits were displayed and in the basement a cafeteria.

The mornings were devoted to diagnostic clinics in medicine, surgery and allied branches. Addresses on scientific subjects were held in the afternoons and evenings.

Most of the leading medical centers of the United States and Canada were represented in the personnel of the program. The subjects treated were varied and ably presented. To the profession of Indianapolis is due the greatest commendation for the variety of clinical material made available and for the thoroughness with which the cases were worked up for presentation.

As an illustration of the wealth of material presented attention might be called to Dr. Joslin's Diabetic Clinic. Assembled on the stage were thirty-one diabetics from three to sixty years of age, representing most every phase of the disease. The apparent excellent mental and physical condition of three young patients who have been on Insulin for ten years was a fitting tribute to the benefits to be derived from the use of this extract plus intelligent dietary management.

A very unusual and instructive moving picture demonstration was presented from the Lahey Clinic of Boston. By means of animated cartoons of the heart it was possible to visualize how and where the impulses originate, how they spread and the response of the auricle and the ventricle to normal and abnormal stimuli. Simultaneous with the visible spread of impulses through the heart muscle was shown an electrocardiographic tracing of the response to normal impulses and the variation produced in it when impulses arise from abnormal areas or are blocked in their passage and the changes incident to axis deviation.

Space will not permit even a brief resume of such a vast program as was presented. Some idea of its scope may be gleaned from the fact that in a period of five days there were presented thirty-four diagnostic clinics covering the subjects of Medicine, Surgery, Pediatrics, Genitourniary and Orthopedics and forty-four addresses on Medicine, Surgery, Orthopedics, Optholmology, Pediatrics, Genito-urinary, Dermotology, Radiology, Otology, Laryngology, Rhinology and Research.

The rapid advance being made in the art and science of medicine is constantly making it increasingly difficult for any one man to comprehend the intricacies of even one branch of medicine. With the realization of the interdependence of physiologic functions and their disturbance by various pathologic changes in widely separated parts of the body, the hopelessness of mastery of the subject becomes apparent. The tendency of present day medicine is to become more and more specialized with the result that medical vision is narrowed.

A program such as presented by the Interstate Postgraduate Medical Association aids one in seeing medicine as a whole and offers the opportunity of hearing each special subject discussed by a recognized authority on that subject.

—E. L. Bridges, Omaha.

CONGRATULATIONS ON A TWENTY-FIFTH ANNIVERSARY!

Alluring advertisements and persuasive radio announcers daily bring before us the need for clean bodies, teeth protection, sunshine, plenty of refreshing sleep and nourishing food. But it was not ever thus. Twenty-five years ago the majority of men and women seldom read or heard about reasons why one should practice daily health habits. The first instrument to bring this need home to them was a tiny symbol. It was used as a medium to teach health education. It was the penny Christmas seal. Its twenty-fifth anniversary is this year. Congratulations!

Tuberculosis associations from the beginning have made health education one of their chief concerns. During the past twenty-five years their teachings have contained such slogans as: "Play in the sunshine," "Go to your doctor at least once a year," "Keep your body clean inside and out with plenty of water," "Brush your teeth twice a day," "A cold is nothing to sneeze about." These statements were backed by scientific reasons for obeying health laws. "By preventing tuberculosis we can eventually stamp it out," was the basic theory upon which they founded their nationwide health movement.

There is no question that today practically everybody—from the school child to the grandfather—has become health-conscious. Soap manufacturers, food producers, bathing suit makers, and many other business concerns have capitalized our health-consciousness. We are made aware of this fact every time we look through a magazine or turn on the radio. Far be it from the 2,084 state and local tuberculosis associations or their leader, the National Tuberculosis Association, to take undue credit for better health conditions that were bound to come with the march of progress. For their symbol of good health, however, the gay little Christmas seal, they may justly be proud. Appealing to newsboy and banker alike, these holiday stickers have come to be the accepted "seals of health."

This year is the twenty-fifth anniversary of their use. In a comparatively short period of time they have helped to decrease the death rate from tuberculosis to less than one-half of what it was in 1907. On a twenty-fifth birthday a person is just standing on the threshold of productive life. Yet at that age period there are now more deaths from tuberculosis than for any other age period. For that reason the work must still go on and the little seals must be sold until we have this sickness as well controlled as smallpox. For research work, clinics, tuberculosis nurses, protective tests among children, the money must be raised. Such a good beginning must be followed by a good ending.

Congratulations to the Christmas seal on its twenty-fifth anniversary! And paradoxical as this birthday wish may sound—we hope it will not be necessary for the seal to reach its fiftieth!

CUSTER COUNTY SOCIETY HONORS DR. A. L. MATHEWS: FIFTY YEARS IN MEDICINE

The Custer County Medical society, October 26, at the Arrow hotel, Broken Bow, sponsored a complimentary dinner honoring Dr. and Mrs. Alexander L. Mathews on his fifty years in the medical profession.

DR. A. L. MATHEWS

Dr. R. D. Bryson gave a testimonial to Dr. Mathews and Dr. C. L. Mullins gave some early memories of the honor guest. "An Appreciation of Dr. Mathews", prepared by George B. Mair, a former long-time editor of Calloway, now resident in California, was read by Dr. F. A. Burnham.

Dr. Mathews was born in Pennsylvania in 1849, attended the public schools and was graduated from the Eclectic Medical Institute, Cincinnati in 1882. He first engaged in practice at Sugar Run, in his native state, and located at Calloway, Nebr., in the fall of 1886. He has been an active member of the Custer County Medical society since its organization in 1887. He did an extensive practice over a large pioneer territory for many years. He was always known as an honorable, upright and unusually successful practitioner. He was also known as the doctor who prayed for and with his patients.

He has been a man of affairs in Custer county. He organized a bank in Calloway in 1887, was the prime mover in the building of a mill, had interests in merchandising and in the live stock business. He was mayor of Calloway for eight years. He lectured on Dermatology in the Lincoln Medical college for two years.

HONOR TO WHOM HONOR IS DUE

DR. BYRON B. DAVIS, DR. HERSCHEL P. HAMILTON, DR. MARY MacVEAN-EDMUNDS, DR. WILLIAM HENRY BETZ

The medical editor is ever keen to record honors conferred upon physicians by their fellows or by community lay groups. It shows a keen appreciation by friends of something in the life work of the one honored. These friendly gestures mean a lot to those upon whom they are conferred; but quite apart from what it means to those so honored it is a good thing for those who do the honors. Honoring others we honor ourselves. We think more of ourselves for having contributed to another's happiness. The social features of such functions are worthwhile. The physician's life work has to do with the sufferings of humanity about which he hears aplenty in his daily rounds. He needs to commune with people of his kind, needs pleasant diversion —and what can be more pleasant than to take part in honoring a confrere or a neighbor?

Within recent weeks honors have been showered on the following Nebraska physicians and surgeons:

Dr. Byron B. Davis, 73, Omaha surgeon, was given a testimonial luncheon by the good fellowship committee of the Chamber of Commerce, October 31. Dr. Davis, who originally was engaged in practice at McCook for a number of years, has been practicing surgery in Omaha for upward of forty years. He has been on the teaching staff of the Omaha Medical College and its successor, the Nebraska University College of

Medicine, since he located in Omaha. He has taken an active part in community affairs as witness the testimonial certificate presented, which reads:

"In appreciation of services to the city of Omaha and in tribute to those qualities that inspire men to labor for the common good, the good fellowship committee of the Omaha Chamber of Commerce does hereby publicly record its gratitude for the valuable civic work of Dr. B. B. Davis."

Dean Poynter of the University College of Medicine delivered the principal address. About twenty physician friends of Dr. Davis occupied seats at the speakers table.

Dr. Davis is a graduate of the University of Minnesota Medical School and spent two years at European clinics previous to locating in Omaha.

Dr. Herschel P. Hamilton, 73, Omaha surgeon, was the guest of honor at a dinner given by the staff of the Covenant hospital, Omaha, November 3. About seventy-five staff members and physicians, invited guests, were present. Following the dinner Dr. Max Emmert was introduced as toastmaster and called upon Dr. John E. Summers, Dr. Paul Ellis, Rev. Doane, Dr. F. A. Long, Dr. John P. Lord, and Dr. Rudolph Rix, who spoke appropriately for the occasion and in congratulation of Dr. Hamilton, who has recently resigned his position in the hospital and has retired from practice.

Dr. Hamilton is a native of Kentucky, obtained his early schooling in a log school house, is a graduate of the University of Louisville, 1887, has been located in Omaha since that date, has been connected with Creighton Medical College most of the time in different teaching capacities, and has made his impress on Nebraska surgery.

Dr. Mary MacVean-Edmonds, physician, city health director, children's welfare worker for a third of a century, is the 1932 Civic Award Honoree of Nebraska City Rotary club. Presentation of the certificate was made October 19 before the largest audience that ever attended a Service Award program.

She is a graduate of Gross Medical College, Denver, 1898. She does eye, ear, nose and throat work. She is the wife of Dr. William Edmonds.

Dr. William Henry Betz, Bellevue, was the recipient recently of the award of the local American Legion "for outstanding service to the community over a period of more than thirty years. Service to the poor has been the watchword of this man."

Dr. Betz is a graduate of the University of Nebraska College of Medicine, 1900, and his professional life has been devoted to the Bellevue community.

TUBERCULOSIS HINT NO. II

The profession has gradually learned that it need not wait for the presence of tubercle bacilli in the sputum before making a diagnosis. It is now time for it to make the next step: To learn that the diagnosis can also be made and ought to be made in cases where there may be no clinical or x-ray findings in the chest.

—**Miles J. Breuer, Lincoln.**

OBSTETRICAL AND GYNECOLOGICAL HINTS. NO. X

Adenocarcinoma of the cervix is treacherous, in that by the time external evidence of the lesion is apparent, extension into the parametrium has occured.

—**Harold S. Morgan, Lincoln.**

DERMATOLOGIC HINT NO. X

Acne vulgaris is an important disease and should be treated. Many physicians do nothing for the patient except inform him that his eruption will probably disappear before he reaches the age of thirty-five.

—**Donald J. Wilson, Omaha.**

MEDICO-LEGAL DISABILITIES IV

A distinction exists between accidental injury and disease. Disease may be an accidental injury: To be:

1st: The disease must be assignable to a determinate or single act identified in space of time.

2nd: Must be assignable to something catastrophic or extraordinary.

—**Czar Johnson, Lincoln.**

EDITORIAL PARAGRAPHS

Anyway, we do not need to swallow Brinkley!

It is stated that the work of the county hospital, in Omaha, has more than doubled in two years.

The voters of Arizona elected Dr. B. B. Moeur for governor, which seems a hopeful indication for the medical profession.

Recent additions to our list of advertisers: Dr.

James Kelley, Omaha, radium; McCord-Brady. food products; the Bunten clinic, Cheyenne.

Nebraska, with a death rate of 9.3 per 1,000 population, ranked sixth healthiest state in 1931, according to a report of the census bureau.

If you wish to read a paper at the annual meeting in May, 1933, please send your name and title to Dr. R. B. Adams, Secretary, Center McKinley Bldg., Lincoln, Nebraska.

Announcement has been made that the American College of Physicians will hold its Seventeenth Annual Clinical Session at Montreal, with headquarters at the Windsor Hotel. February 6-10, 1933.

The secretary-treasurer of the Nebraska State Medical Association and the editor of the Journal attended the annual conference of secretaries and editors in Chicago, November 18-19. Comment next month.

Dean Poynter of the University College of Medicine and University hospital, is quoted as authority for the statement that the number of persons given medical attention during the past year increased from thirty to forty per cent.

A chapter was added to the Compensation law by the supreme court holding that notice given within six months after the seriousness of the injury is discovered is sufficient notice, instead of the "six months after the injury" as read in the law.

The Seventh Councilor District Medical society at Superior, October 27, had as guest speaker, Dr. Charles W. Mayo of Rochester, Minn., which is doing something worthwhile for a councilor district meeting and shows real leadership on the part of some one.

The death, October 1, of Prof. William A. Puckner, for twenty-six years Secretary of the Council on Pharmacy and Chemistry of the American Medical Association is announced. He was sixty-eight years of age. He was noted for his efficiency and for rare executive ability.

The Committee on the Cost of Medical care is at present releasing for publication a series of reports on different phases of the problem studied and we are publishing some of them. They make interesting readin gand add to our sum of knowledge whether the conclusions in all cases appeal to us or not.

At its meeting of October 8th, the Board of Directors of the American Society for the Control of Cancer took the following action: "It was voted that the *Bulletin* of the Society be made its official organ and that the present relationship between the Society and the *American Journal of Cancer* be discontinued."

Before us lies a copy for an outline for health work for the Women's Auxiliary to the Nebraska State Medical Association, the work of Mrs. C. W. Pollard, chairman. It is a very comprehensive outline, evidences much study and reflects credit upon its author. If but a fraction of the work outlined is undertaken and carried on the Auxiliary will be worthwhile.

Dr. Morris Fishbein, editor of the *Journal of the American Medical Association,* spoke before the Nebraska State Teacher's Association. sectional meetings, October 27, at Lincoln and Norfolk, preaching the gospel of scientific medicine as only he can do. A hundred Morris Fishbeins carrying that message might really accomplish wonders in educating the laity.

Mrs. Walter Jackson Freeman of Philadelphia, president of the Women's Auxiliary of the American Medical Association died October 28. She was a remarkable woman, brilliant, forceful, democratic. She was a daughter of the late Dr. William W. Keen, well known Philadelphia surgeon (former president of the American Medical Association), the widow of a physician and the mother of two physicians.

A campaign speaker touching on the economic situation aptly stated that "Hoover was not responsible for the mis-use of the motor car, the moving picture and jazz—nor did he bring on the World war, nor throw the people of Europe into chaos and disorder. He did not loan billions of dollars to the allies without security of any kind." All of which should remind us of that part for which we, ourselves, are to blame.

Balyeat says: "Experience has led us to believe that allergic individuals are otherwise healthy, having a superresistance to infectious disease, and brain cells more active than the average normal. Some authors class the allergic patient as a neurotic. This may be true of a few, but the great majority do not belong to this group. It is true that most of them are people with sensitive mentalities and mercurial dispositions, but they are dynamic characters and are frequently leaders in their lines of endeavor."

We are requested to ask, county, district and state medical societies, to adopt resolutions, requesting the Medical Colleges of the United States to reduce the number of graduates each year until the law of supply and demand has been fully complied with. The number of graduates to be determined by a national committee appointed by the President of the American Medical Association. Concerning this we are about as much impressed as we are about the possibility of reducing the crop acreage of the farmer to boost prices.

Nineteen Nebraska hospitals are now on the accredited list of the American College of Surgeons. Omaha hospitals on the list are Clarkson Memorial, St. Joseph, Douglas County, Evangelical Covenant, Immanuel, Nebraska Methodist Episcopal, St. Catheriine and the University of Nebraska hospital. Accredited hospitals outside of Omaha are St. Joseph at Alliance, Lutheran at Beatrice, St. Mary at Columbus, Falls City at Falls City, St. Francis at Grand Island, Bryan Memorial. Lincoln General, St. Elizabeth and Veterans Administration at Lincoln, St. Catherine of Sienna at McCook and West Nebraska Methodist Episcopal at Scottsbluff.

Sir George Lenthal Cheatle, English surgeon and outstanding authority on cancer, spent October 24th in Omaha and conducted a cancer clinic at the University of Nebraska hospital and at noon was the guest at a hospital surgical staff luncheon. At 6 p. m. Sir George was entertained and spoke on "The General Aspects of Cancer," at a dinner given at the Omaha club by Alpha Omega Alpha, medical honor fraternity. "Most important among recent discoveries in the fight against cancer was made recently by Dr. R. J. Ludford of the British Imperial Cancer Research fund," he said. "Dr. Ludford discovered that normal living cells of the human body will take the color of a dye called trypan blue, while living cancer cells refuse to take the dye. It may be," Sir George said, "that this will form the basis for important future observations."

Those engaged in pharmacy feel that the indiscriminate use of the word "drug" where "narcotic" or "dope" should be used is a reflection on an honorable business and profession and tends to degrate it in the minds of many lay readers. As defined in the National Food and Drugs Act, a drug is an article used for the purpose of curing, mitigating, or preventing disease in many or other animal. News writers and headline writers frequently refer to "drug" addicts, "drug" fiends, and "drug" raids when they mean narcotic (or "dope") addicts, narcotic fiends, and narcotic raids. There is no objection on the part of the pharmaceutical profession and the drug trade to the publication of the misdeeds or misadventures of "dope peddlers" or "dope addicts", but to describe them as "drug peddlers" or "drug addicts" does an injury, so we are asking all editors to help discontinue the practice of using the word "drug" where the word "dope" or "narcotic" should be employed.

NECROLOGY

Frank H. Kucera, Verdigre, Nebr.; Creighton Medical College, 1895; practitioner at Verdigre for twenty-seven years; died suddenly, October 25, 1932, aged about fifty-three years. A widow and four sons survive.

William N. Hylton, Gresham, Nebr.; University of Nebraska College of Medicine, 1886; physician at Gresham for forty years; member Nebraska State Medical Association, died November 4, 1932, aged seventy years. He is survived by two sons and a daughter. Dr. Harry Hylton, Table Rock, was a brother.

John C. Malster, Stromsburg, Nebr.; native of Ohio; Jefferson Medical College, 1896; also a graduate in pharmacy; member, Nebraska State Medical Association; delegate for many years from Polk county, and for six years councilor of the Sixth district; chief medical examiner for ten years of the Nebraska Mutual Life Insurance company; representative in the state legislature 1926-27; sometime mayor of Stromsburg; practitioner at Stromsburg since 1900; a mild mannered and likeable character, well known over the state; died suddenly November 7, 1932, aged about seventy-two years. Three daughters in the 'teens survive. Dr. R. M. Malster, Winner, S. D., is a brother.

AUXILIARY NEWS LETTER

Mrs. Walter Jackson Freeman, President of the Women's Auxiliary to the American Medical Association, died on October 26th in Philadelphia. The funeral was held there, October 29th. Mrs. Freeman was the daughter of Dr. William W. Keen of Philadelphia. Her death was a great shock to all Auxiliary members, particularly so to those who had the good fortune to know her.

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Because of Mrs. Freeman's death the National Board meeting, which was to have been held in Chicago, was cancelled.

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The State Medical Board had an all day meeting on October 27th, at the home of Mrs. Clyde Roeder, president. The meeting was very well attended, twenty members being present. A delicious luncheon was served after which state health education work was discussed. Plans were made and committees appointed for the Nebraska State Medical meeting to be held in Omaha in May.

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The Tri-county Auxiliary officers and committee chairmen are:

Mrs. J. E. Gelow, president, Grand Island.

Mrs. J. G. Woodin, secretary-treasurer, Grand Island.

Mrs. W. D. McGrath, public relations chairman, Grand Island.

Mrs. W. H. Hombach, publicity chairman, Grand Island.

This Auxiliary meets four times a year. The September meeting was held at the home of Mrs. Earle E.

Farnsworth, Grand Island, with twenty members present. A delightful luncheon was served. The guest of honor was Mrs. H. R. Miner of Falls City, the state treasurer. She gave a very enthusiastic message of plans and activities. She suggested that the Auxiliary have a medical advisor and Dr. Earle Farnsworth was elected for the year.

It was also suggested that each division of the Grand Island Parent Teachers' Association devote one program to the "Need of Periodic Medical Examination." Arrangements have since been made for one of the physicians to speak at each of these meetings, and the Auxiliary to distribute the leaflet, "Go to Your Doctor Before He Has to Come to You."

Mrs. Farnsworth, Mrs. Gelow and Mrs. Woodin have motored to the several towns in which there are prospective members, calling upon each to explain the object of the organization and to extend an invitation to join. The results were most gratifying and a total of twenty-nine paid up memberships for 1932-1933 was reported.

This Auxiliary also wishes to report the very successful operation of a Library Extension Service for the patients of St. Francis Hospital, Grand Island, which was made possible last year by the purchase of a book truck. Direct credit for this is due the former president, Mrs. Earle E. Farnsworth, and it is through her continued efforts that the books are conveyed to and from the hospital each week. Some of the doctors have said of the Library Extension Service, that it is the most commendable thing which has been accomplished by the organization.

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The doctors' wives and the Auxiliary of Lincoln sponsored an Italian Garden Musicale and Tea on Columbus day at the Nurses' Home of St. Elizabeth's hospital, the funds to be used for the benefit of the charity patients. Mrs. B. F. Williams was chairman, and the Auxiliary officers acted as hostesses. $130.00 was cleared.

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Miss Marie Waite, the nutritionist of the Omaha Visiting Nurses' Association, told the Douglas County Medical Auxiliary, on Tuesday, October 25th, of the need for certain types of rations for the charity stores. The relief fund should provide absolute essentials for the child. Inadequate funds should cover adequate foods. Doctor Henry C. Sherman, of Columbia University, made diet lists with milk as the foundation. Milk provides comparative safety against permanent impairment. Canned milk is as good to use as liquid milk. She gave the list used in Tulsa, Oklahoma, which costs six cents a day, including overhead. Any community can do the same if properly supervised.

1 qt. milk from skimmed milk powder
2 teaspoonfuls Cod Liver Oil
Tomato Juice
Potatoes
Turnips
Onions, Cabbage, Carrots, or Spinach
Whole Wheat
Ground Lean Meat
Bacon or Lard
Baking Powder
Salt

—Mrs. W. H. Stokes.

THE ALPHA OMEGA ALPHA HONORARY FRATERNITY

At a recent meeting in Chicago, the directors of Alpha Omega Alpha Honorary Medical Scholarship Society adopted the following resolutions in recognition of the eminent services of the late Dr. William W. Root, Slaterville Springs, New York, the founder of the society and secretary-treasurer since its organization in 1902:

1. That all stationery and official documents of the society bear the words, "Founded by William W. Root, 1902", and

2. That the annual lecture presented each year by a leading medical scientist, be known as the "William W. Root Alpha Omega Alpha Lecture."

The present officers of the society are Walter L. Bierring, Des Moines, president, Austin A. Hayden, Chicago, vice president, Josiah J. Moore, 55 E. Washington Street, Chicago secretary-treasurer. Mrs. Root will continue as assistant secretary.

In addition to the officers the directorate includes Ray Lyman Wilbur, Washington, D. C., Waller S. Leathers, Nashville, Louis B. Wilson, Rochester, Minn., and Willard C. Rappleye, New York City.

The committee on extension and policy comprises Elias P. Lyon, Minneapolis, chairman, William Pepper, Philadelphia, Irving S. Cutter, Chicago, Frederick C. Waite, Cleveland, and Thomas C. Routley, Toronto.

THE SOCIETIES

The regular meeting of the **Omaha-Douglas County Medical Society** was held October 12, Dr. B. M. Riley, president, presiding.

The guest speaker was Dr. A. J. Myers, Director of the Lakehurst School for Tuberculosis Children in Minneapolis. Dr. Myers presented a comprehensive discussion on childhood tuberculosis, illustrating his discussion with lantern slides.

Dr. Myers' paper was followed by a case report presented by Dr. C. S. Moran. This was followed by a demonstration of specimen of the case.

Dr. Russell Best presented a Simplified Colostomy Belt.

The regular meeting of the **Omaha-Douglas County Medical Society,** October 25, featured a program put on by the Lancaster County Medical Society. President Riley turned the chair over to Dr. Earl Brooks, president of the Lancaster County Medical Society, who presided during the scientific program. Dr. Brooks expressed the appreciation of that society for the opportunity of appearing before the Omaha group.

The first paper was by Dr. E. B. Reed on "The Differential White Cell Count." This paper was discussed by Drs. Rubnitz and Niehaus.

Dr. Roy H. Whitham presented a paper on "Surgical Indications in Goitre," which was discussed by Doctors A. C. Johnson, Herbert Davis, F. W. Heagey, Frank Conlin and Max Emmert.

The last paper was "A Clinical Pathological Case Report," presented by Dr. George W. Covey and Dr. I. C. Munger, illustrated by lantern slides, and gross specimens. This paper was discussed by Dr. Niehaus.

After the adjournment of the meeting the Women's Auxiliary served lunch in the Club Room.

Under the councilorship of Dr. Homer Davis, Genoa, meetings for the **Fifth Councilor District** were held at Columbus, November 15, and at Fremont, November 21. The district is over one hundred miles long, extending from the Missouri river at Blair to the west line of Merrick county and this original manner of handling a difficult situation is commendable.

The Columbus program:

"Clinical Demonstration of Heart Cases," Adolph Sachs, M. D., Omaha. Clinical Assistants: J. E. Meyer, M. D., Columbus; D. T. Martyn, M. D., Columbus; A. E. Buchanan, M. D., Fremont.

"The Care of Common Fractures", J. E. M. Thompson, M. D., Lincoln. Discussion: C. G. Moore, M. D., Fremont; M. C. James, M. D., Columbus.

The Fremont program:

"Some Common Errors in Diagnosis and Possible Ways of Avoiding Them," A A. Johnson, M. D., Council Bluffs, Iowa. Discussion: W. R. Neumarker, M. D., Columbus; Harry Benson, M. D., Oakland.

"Carcinoma of the Rectum and Rectosigmoid," Fred Rankin, M. D., Rochester, Minn. Discussion: F. W. Morrow, M. D., Columbus; Morris Nielsen, M. D., Blair.

The **Richardson County Medical Society** held a meeting at Hotel Weaver, Falls City, October 25, following a dinner participated in by the ladies of the Auxiliary.

Dr. O. F. Lang, the president, presided at the meeting, which was held at the hotel. Papers were read by Dr. G. E. Faucett of Falls City and Dr. William Shepherd of Rulo. Dr. Faucett discussed "Dental Examination," and Dr. Shepherd, "Jaundice."

Following the business session at the hotel the men adjourned to the home of Dr. Miner, where they spent the remainder of the evening socially with the members of the Auxiliary.

At the **Tenth Councilor District Medical Society** meeting at Ingleside, October 27, Dr. George Hoffmeister, Imperial, was elected president, and Dr. G. L. Pinney, Hastings, secretary-treasurer.

The meeting was attended by some sixty physicians and their wives. At a banquet on Thursday evening they heard an address on medical ethics by Dr. A. E. Cook of Randolph, president of the state association.

Other past presidents of the state organization in attendance at the meeting were Dr. K. S. J. Hohlen of Lincoln and Dr. B. R. McGrath of Grand Island.

Papers on scientific subjects were presented by Dr. H. S. Andrews of Minden, Dr. Hohlen and Dr. W. E. Kelly, assistant superintendent at the state hospital at Ingleside.

The fall meeting of the **Third Councilor District Medical Society** was held at Tecumseh, November 10. Following is the program:

"Respiratory Infections," E. S. Wegner, Lincoln.

"A Film on Encephalography as an Aid in Diagnosis," K. S. J. Hohlen, Lincoln.

"Eye Complications in Sinus Disease," Dr. Earl B. Brooks, Lincoln.

"The Status of Surgery as Related to Vasomotor Changes," Dr. John R. Moritz, of Beatrice.

"Case Report—Tetanus," Dr. F. M. Tushla, Auburn.

"Hypertention," Dr. Raymond E. Traynor, Omaha.

"Nephritis," Dr. John R. Kleyla, Omaha.

The **Seventh Councilor District Medical Society** held its twelfth annual meeting at Superior, October 27th.

The following program was rendered:

"Conditions of the Lumbar Spine of Interest in Relation to Industrial Insurance," Dr. W. A. Rush, Beatrice.

"The Family Physician and the Cross-Eyed Child," Dr. J. J. Hompes, Lincoln.

"Surgical Aspects of Appendicitis," Dr. Clayton Andrews, Lincoln.

"Treatment of the More Common Conditions Resulting from the Break in the Vascular and Lymphatic Circulation of the Lower Extremities," Dr. Fred L. Smith, Rochester, Minn.

"Acute Intussusception in Children—A Report of Thirty-one Cases," Dr. Chas. W. Mayo, Rochester, Minn.

"Coronary Disease," Drs. R. W. Bliss and M. C. Andersen, Omaha

The Nuckolls County Medical Society was host at a seven o'clock dinner at the Nebraskan Hotel. Following the dinner, Dr. A. E. Cook, Randolph, president of the Nebraska State Medical Association, spoke on "Some Phases of Economics Affecting the Profession," and Dr. C. W. M. Poynter, Omaha, spoke on "University Hospitals and Their Relation to the Profession and the Public."

Dr. J. Harold Lynch, Fairbury, was elected president and Dr. R. F. Decker, Byron, was re-elected secretary. About 65 physicians were present at the meeting.

—Rudolph F. Decker, Sec.

The **Custer County Medical Society** held a meeting at Broken Bow, October 26, with Dr. and Mrs. A. L. Mathews of Calloway as honor guests in commemoration of Dr. Mathews' fifty years in medicine.

Dr. C. L. Mullins, president of the organization, presided.

The first address was made by Dr. F. A. Burnham of Arnold, who spoke on "Vitamins." Dr. R. D. Bryson of Callaway then gave a testimonial to Dr. A. L. Mathews and this was followed by "Early Memories of Dr. Mathews" by Dr. C. L. Mullins. "An Appreciation of Dr. Mathews," written by George B. Mair of California, a former resident of Calloway, which he had written and sent to Dr. Mullins was read by Dr. F. A. Burnham. Dr. A. L. Mathews then gave a response.

The November meeting of the **Madison Six County Medical Society** was held at Hotel Norfolk, Norfolk, following a dinner. About forty physicians and their ladies attended. The program:

"Surgery of the Jaws with a Survey of Systemic Disturbances Traceable to Infected Teeth and Jaws," Dr. Wm. L. Schearer, Omaha; "Common Eruptions of the Mouth and Mucus Membrane," Dr. Donald J. Wilson, Omaha.

Dr. Shearer in his inimitable manner discussed the far-reaching effects of focal infections that inspired all his hearers to renewed effort. Dr. Wilson gave a screen talk which brought out vividly the conditions under consideration.

The program on the whole was one of the most interesting and instructive of the series for the year.

The regular monthly meeting of the **Holt County Medical Society** was held at Stuart, October 27th. Dinner for the members and their wives was served at seven p. m.

Program follows:

Strangulated Hernia, Dr. W. J. Douglas, Atkinson; Discussion, Dr. W. F. Finley, O'Neill; Puerperal Infection, Dr. C. H. Root, Bassett; Discussion, Dr. J. W. Gill, Chambers; Diseases of Rectum, Dr. O. W. French, Page; Discussion, Dr. K. E. Prescott, Long Pine.

The **Fillmore-Saline Counties Medical Society** met at Milligan, October 17, taking dinner, served by the Woman's club at the Jansky-Bouse cafe, after which a program was held in the auditorium. Drs. W. O. Colburn and E. S. Wegner of Lincoln gave talks on gastro-intestinal diseases and diseases of the upper respiratory tract, respectively. General discussion followed, after which slides and photographs were shown dealing with different case records.

The most imposing case discussed was one of chylous cyst in a five months old child in which an operation proved successful, where a vein from the thigh was severed and brought into the abdominal cavity to serve as a new avenue for the carrying off of the chyle into the general circulation.

A meeting of the **Southwestern Nebraska Medical Society** was held in Arapahoe, October 13th, Dr. W. C. Miller acting as host. A dinner was served in the basement of St. Paul's Episcopal church at seven o'clock, with the following program after the dinner:

"Peptic Ulcer," Dr. Mousel, Cambridge; "Rectal Drainage of Appendicial Abcess," Dr. Brown, Stamford; "Portal Cirrhosis," Dr. Carlson, Imperial.

The **Southwest Nebraska Medical Society** met at

Wauneta, November 10, the guests of Dr. and Mrs. H. H. Grossbach and Dr. and Mrs. C. Robert Carlson.

The meeting was arranged to honor Dr. and Mrs. Grossbach, he being a pioneer physician at Wauneta. Dr. W E. Stewart, of Stratton, gave a eulogy on Dr. Grossbach. The scientific program follows:

"Some Pointers in Cystoscopy"—Dr. D. H. Morgan, McCook, Nebr. Discussion by Dr. C. E. Minnick, Cambridge, Nebr.

"Occiput Posterior"—Dr. W. C. Miller, Arapahoe, Nebr. Discussion by Dr. F. H. Krampert, Imperial.

"Spinal Anaesthesia"—Dr. J. M. Willis, McCook, Nebr. Discussion by Dr. Geo. Hoffmeister, Imperial, Nebr.

The **Kimball-Cheyenne County Medical Society** met at a regular meeting at the Kimball hospital Monday evening, with doctors from Cheyenne, Scottsbluff, Gering, Sidney, Dalton and Gurley in attendance.

Papers were given by Dr. Joe Bunten, Cheyenne, on "Ectopic Gestation" and by Dr. Mitchel, Scottsbluff, on "Appreciation of Medicine." Sixteen doctors attended. The meeting closed with a social gathering and lunch at a local cafe.

The quarterly meeting of the **Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society** at Randolph had the following program followed by a covered dish supper:

1.—The Problem of Sinusitis in General Medical Practice—Dr. A. D. Dunn, Omaha.

2.—The Accepted Treatment of Certain Fractures as Outlined by the Fracture Committee of the American College of Surgeons—Dr. Herman F. Johnson, Omaha.

3.—Case Reports of Fracture of the Elbow—Dr. Walter Benthack, Wayne.

HUMAN INTEREST TALES

Dr. R. R. Brady has located at Wood Lake.

Dr. B. F. Gay has moved from Oconto to Wilcox.

Dr. C. E. Pinckney has located at Ericson, having moved from Scotia.

Dr. R. E. Peters, Wymore, has recovered from an attack of pneumonia.

Dr. and Mrs. Harry O'Conner, New York City, visited in Pierce, recently.

Dr. and Mrs. R. L. Weaver, Marquette, motored to Ohio points early in October.

Dr. Dean Harold King, a Spencer product, has returned to his home town to locate.

Dr. and Mrs. W. A. DeMay, Fort Collins, Colo., visited relatives in Shelton, late in October.

Dr. F. P. Dorsey, Jr., Hartington, and Miss LaVerne Tathews, Yankton, were married, November 5.

Dr. J. F. Brendel, Murray, is reported in an Omaha hospital undergoing medical and surgical care.

Dr. and Mrs. J. W. King, Hartington, attended the Railway Surgeons' convention in Chicago in November.

Dr. P. H. Salter, Norfolk, spoke before the local Rotary club on "High Blood Pressure" early in November.

Dr. E. W. Rowe, Lincoln, spoke before a group of the Y. M. C. A., on "Alcohol and Modern Medical Science."

Dr. F. A. Long, Madison, gave a talk on The Development of Nebraska Roads before the local Women's club.

Dr. W. E. McElligott, former Chadron physician, has returned and has become associated with Dr. C. M. Pierce.

Dr. A. C. Blattspieler, Tobias, spent two weeks on a hunting trip to the Canadian woods, and reported hunting good.

Dr. A. D. Mahaffey, a practicing physician at Elba thirty years ago, visited at Elba recently. He is now located in Texas.

A student loan fund has been established at Creighton University and the medical students recently contributed $100 to it.

Dr. E. A. Liebold, Salem, Ore., visited at Shelby and attended a Creighton "Homecoming" in Omaha the last days of October.

Dr. and Mrs. F. A. Brewster, Holdrege, returned recently from an airplane journey to Washington, D. C., and points in Virginia.

Dr. E. J. Latta, Hastings, was elected head of the Nebraska State Eclectic Medical association at its meeting in that city recently.

Dr. A. B. Adams, in practice at Florence for some years, has retired on account of ill health and has been succeeded by Dr. G. H. Boetel.

Dr. Olga Stastny, Omaha, recently spoke before the Pre-Medic club of the Municipal University on "Medicine and the Opportunities in Its Field."

Dr. R. D. Schrock, gave an illustrated talk on the care of crippled children before the women's division of the Omaha Chamber of Commerce.

Dr. C. A. Roeder, Omaha, was elected president of the Mayo clinic and foundation of resident and ex-resident physicians at the annual meeting.

A children's clinic supplementary to the Elks' Childrens' Clinic held last spring was held at Columbus, November 3. Fifty children were examined.

Dr. and Mrs. C. O. Giese, Colorado Springs, spent a little time with Dr. and Mrs. P. A. Sundbury, Holdrege, on their way to the Inter-State meeting at Indianapolis.

The Alexandria Argus recently devoted two pages to an article on the "History of the Medical Profession in Alexandria." The article presented the pictures of five physicians and was very creditable. Dr. Harry J. Newell was the author.

BOOKS RECEIVED

SYNOPSIS OF GYNECOLOGY, Based on the Textbook Diseases of Women by Harry Sturgeon Crossen, M. D., F. A. C. S., Professor of Clinical Gynecology, Washington University Medical School, and Gynecologist in Chief to the Barnes Hospital and the Washington University Dispensary; Gynecologist to St. Louis Maternity Hospital, St. Luke's Hospital, and the De Paul Hospital; Fellow of the American Gynecological Society and Robert James Crossen, M. D., Instructor in Clinical Gynecology and Obstetrics, Washington University School of Medicine; Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital; Gynecologist to St. Luke's Hospital and De Paul Hospital. 12 mo, 227 pages with 110 illustrations. Published by the C. V. Mosby Company, St. Louis, cloth cover, Price $2.75.

CLINICAL GYNECOLOGY by C. Jeff Miller, M. D., Professor of Gynecology, Tulane University School of Medicine; Chief of the Department of Gynecology of Touro Infirmary; Senior Visiting Surgeon, Charity Hospital, New Orleans. 8 mo., 560 pages with illustrations, cloth cover, published by the C. V. Mosby Company, St. Louis. Price $10.00.

CHILDREN'S TONSILS IN OR OUT, A Critical Study of the End Results of Tonsillectomy by Albert D. Kaiser, M. D., Associate Professor of Pediatrics, University of Rochester Medical School; Chief Pediatrician, Rochester General Hospital; Pediatrician. Rochester Dental Dispensary. 6 Mo., 307 pages with illustrations, cloth cover. Published by the J. B. Lippincott Company, Philadelphia, price $5.00.

THE FAILING HEART IN MIDDLE LIFE, by Albert S. Hyman, A. B., M. D., F. A. C. P., Cardiologist Beth Israel and Manhattan Hospitals, etc., and Aaron E. Parsonnet, M. D., C. M., F. A. C. P., attending Physician and Cardiologist, Newark Beth Israel Hospital, etc., Octavo, Cloth, 538 pages, Price $5.00. F. A. Davis Company, Philadelphia.

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Vol. XVII Norfolk, Nebraska, January, 1932 No. 1

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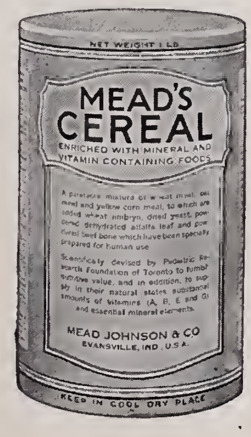

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